R315. Environmental Quality, Waste Management and Radiation Control, Waste Management.
Rule R315-266. Standards For The Management Of Specific Hazardous Wastes And Specific Types Of Hazardous Waste Management Facilities.
R315-266-20. Recyclable Materials Used in a Manner Constituting Disposal - Applicability.

(a) The regulations of Sections R315-266-20 through 23 apply to recyclable materials that are applied to or placed on the land:

(1) Without mixing with any other substance(s); or

(2) After mixing or combination with any other substance(s). These materials shall be referred to throughout Sections R315-266-20 through 23 as "materials used in a manner that constitutes disposal."

(b) Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the products so as to become inseparable by physical means and if such products meet the applicable treatment standards in Sections R315-268-40 through 49, or applicable prohibition levels in Section R315-268-32 or RCRA section 3004(d), where no treatment standards have been established, for each recyclable material, i.e., hazardous waste, that they contain, and the recycler complies with Subsection R315-268-7(b)(6).

(c) Anti-skid/deicing uses of slags, which are generated from high temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, in a manner constituting disposal are not covered by the exemption in Subsection R315-266-20(b) and remain subject to regulation.

(d) Fertilizers that contain recyclable materials are not subject to regulation provided that:

(1) They are zinc fertilizers excluded from the definition of solid waste according to Subsection R315-261-4(a)(21); or

(2) They meet the applicable treatment standards in Sections R315-268-40 through 49 for each hazardous waste that they contain.

R315-266-21. Recyclable Materials Used in a Manner Constituting Disposal - Standards applicable to generators and transporters of materials used in a manner that constitutes disposal.

Generators and transporters of materials that are used in a manner that constitutes disposal are subject to the applicable requirements of Rules R315-262 and 263, and the notification requirement under section 3010 of RCRA.

R315-266-22. Recyclable Materials Used in a Manner Constituting Disposal - Standards applicable to storers of

materials that are to be used in a manner that constitutes disposal who are not the ultimate users.
Owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of Sections R315-264-1 through 259; 40 CFR 265.1 through 260, which are adopted by reference; and Rules R315-270 and 124 and the notification requirement under section 3010 of RCRA.

R315-266-23. Recyclable Materials Used in a Manner Constituting Disposal - Standards applicable to users of materials that are used in a manner that constitutes disposal.

(a) Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are regulated under all applicable provisions of Rules R315-124, 264, 265, 268, and 270 and the notification requirement under section 3010 of RCRA. These requirements do not apply to products which contain these recyclable materials under the provisions of Subsection R315-266-20(b).

(b) The use of waste or used oil or other material, which is contaminated with dioxin or any other hazardous waste, other than a waste identified solely on the basis of ignitability, for dust suppression or road treatment is prohibited.

R315-266-70. Recyclable Materials Utilized for Precious Metal Recovery - Applicability and requirements.

(a) The regulations of Section R315-266-70 apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these.

(b) Persons who generate, transport, or store recyclable materials that are regulated under Section R315-266-70 are subject to the following requirements:

(1) Notification requirements under section 3010 of RCRA;

(2) Sections R315-262-20 through 27, for generators; Sections R315-263-20 and 21, for transporters; and 40 CFR 265.71 and 72, which are adopted by reference, for persons who store; and

(3) For precious metals exported to or imported from designated OECD member countries for recovery, Sections R315-262-80 through 89 and 40 CFR 265.12(a)(2), which is adopted by reference. For precious metals exported to or imported from non-OECD countries for recovery, Sections R315-262-50 through 58 and 60.

(c) Persons who store recycled materials that are regulated under Section R315-266-70 shall keep the following records to document that they are not accumulating these materials speculatively, as defined in Subsection R315-261-1(c);

(1) Records showing the volume of these materials stored at the beginning of the calendar year;
(2) The amount of these materials generated or received during the calendar year; and
(3) The amount of materials remaining at the end of the calendar year.
(d) Recyclable materials that are regulated under Section R315-266-70 that are accumulated speculatively, as defined in Subsection R315-261-1(c), are subject to all applicable provisions of Rules R315-262 through 265, 270, and 124.

R315-266-80. Spent Lead-Acid Batteries Being Reclaimed - Applicability and requirements.
(a) Are spent lead-acid batteries exempt from hazardous waste management requirements? If you generate, collect, transport, store, or regenerate lead-acid batteries for reclamation purposes, you may be exempt from certain hazardous waste management requirements. Use Subsections R315-266-80(a)(1) through (7) to determine which requirements apply to you. Alternatively, you may choose to manage your spent lead-acid batteries under the "Universal Waste" rule in Rule R315-273.
(1) If your batteries will be reclaimed through regeneration, such as by electrolyte replacement, then you are exempt from Rules R315-262, except for Section R315-262-11; 263; 264; 265; 266; 268; 270; and 124, and the notification requirements at section 3010 of RCRA and you are subject to Rule R315-261 and Section R315-262-11.
(2) If your batteries will be reclaimed other than through regeneration and if you generate, collect, and/or transport these batteries then you are exempt from Rule R315-262, except for Section R315-262-11; 263; 264; 265; 266; 270; and 124, and the notification requirements at section 3010 of RCRA and you are subject to Rule R315-261 and Section R315-262-11, and applicable provisions under Rule R315-268.
(3) If your batteries will be reclaimed other than through regeneration and if you store these batteries but you aren't the reclaimer then you are exempt from Rule R315-262, except for Section R315-262-11; 263; 264; 265; 266; 270; and 124, and the notification requirements at section 3010 of RCRA and you are subject to Rule R315-261 and Section R315-262-11, and applicable provisions under Rule R315-268.
(4) If your batteries will be reclaimed other than through regeneration and if you store these batteries before you reclaim them then you shall comply with Subsection R315-266-80(b) and as appropriate other regulatory provisions described in Subsection R315-266-80(b) and you are subject to Rule R315-261 and Section R315-262-11, and applicable provisions under Rule R315-268.
(5) If your batteries will be reclaimed other than through regeneration and if you don't store these batteries

before you reclaim them then you are exempt from Rule R315-262, except for Section R315-262-11; 263; 264; 265; 266; 270; and 124, and the notification requirements at section 3010 of RCRA and you are subject to Rule R315-261 and Section R315-262-11, and applicable provisions under Rule R315-268.

(6) If your batteries will be reclaimed through regeneration or any other means and if you export these batteries for reclamation in a foreign country the you are exempt from Rules R315-263, 264, 265, 266, 268, 270, 124, and the notification requirements at section 3010 of RCRA. You are also exempt from Rule R315-262, except for Section R315-262-11, and except for the applicable requirements in either: Sections R315-262-80 through 89; or Section R315-262-53 "Notification of Intent to Export, Subsection R315-262-56(a)(1) through (4)(6) and (b) "Annual Reports," and Section R315-262-57 "Recordkeeping" and you are subject to Rule R315-261 and Section R315-262-11, and either shall comply with Sections R315-262-80 through 89, , if shipping to one of the OECD countries specified in Subsection R315-262-58(a)(1)), or shall:

(i) Comply with the requirements applicable to a primary exporter in Subsections R315-262-53, 56(a)(1) through (4), (6), and (b) and Section R315-262-57; and

(ii) Export these batteries only upon consent of the receiving country and in conformance with the EPA Acknowledgement of Consent as defined in Sections R315-262-50 through 58; and

(iii) Provide a copy of the EPA Acknowledgment of Consent for the shipment to the transporter transporting the shipment for export.

(7) If your batteries will be reclaimed through regeneration or any other means and if you transport these batteries in the U.S. to export them for reclamation in a foreign country then you are exempt from Rules R315-263, 264, 265, 266, 268, 270, 124, and the notification requirements at section 3010 of RCRA and you shall comply with applicable requirements in Sections R315-262-80 through 89, if shipping to one of the OECD countries specified in Subsection R315-262-58(a)(1), or shall comply with the following:

(i) you may not accept a shipment if you know the shipment does not conform to the EPA Acknowledgment of Consent;

(ii) you shall ensure that a copy of the EPA Acknowledgment of Consent accompanies the shipment; and

(iii) you shall ensure that the shipment is delivered to the facility designated by the person initiating the shipment.

(b) If I store spent lead-acid batteries before I reclaim them but not through regeneration, which requirements apply? The requirements of Subsection R315-266-80(b) apply to you if you store spent lead-acid batteries before you reclaim them, but you don't reclaim them through

regeneration. The requirements are slightly different depending on your permit status.

(1) For Interim Status Facilities, you shall comply with:

(i) Notification requirements under section 3010 of RCRA.

(ii) All applicable provisions in 40 CFR 265.1 through 4, which are adopted by reference.

(iii) All applicable provisions in 40 CFR 265.10 through 19, which are adopted by reference, except 265.13, waste analysis.

(iv) All applicable provisions in 40 CFR 265.30 through 56, which is adopted by reference.

(v) All applicable provisions in 40 CFR 265.70 through 77, which are adopted by reference, except 265.71 and 72, dealing with the use of the manifest and manifest discrepancies.

(vi) All applicable provisions in 40 CFR 265.90 through 260, which are adopted by reference.

(vii) All applicable provisions in Rules R315-270 and 124.

(2) For Permitted Facilities:

(i) Notification requirements under section 3010 of RCRA.

(ii) All applicable provisions in Sections R315-264-1 through 4.

(iii) All applicable provisions in Sections R315-264-10 through 19, but not Section R315-264-13, waste analysis.

(iv) All applicable provisions in Sections R315-264-30 through 56.

(v) All applicable provisions in Sections R315-264-70 through 77, but not Sections R315-264-71 or 72, dealing with the use of the manifest and manifest discrepancies.

(vi) All applicable provisions in Sections R315-264-90 through 259.

(vii) All applicable provisions in Rules R315-270 and 124.

R315-266-100. Hazardous Waste Burned in Boilers and Industrial Furnaces - Applicability.

(a) The regulations of Sections R315-266-100 through 112 apply to hazardous waste burned or processed in a boiler or industrial furnace, as defined in Section R315-260-10, irrespective of the purpose of burning or processing, except as provided by Subsections R315-266-100(b), (c), (d), (g), and (h). In Sections R315-266-100 through 112, the term "burn" means burning for energy recovery or destruction, or processing for materials recovery or as an ingredient. The emissions standards of Subsections R315-266-104, 105 through 107 apply to facilities operating under interim status or under a RCRA permit as specified in Subsections R315-266-102 and 103.

(b) Integration of the MACT standards.

(1) Except as provided by Subsections R315-266-100(b)(2), (b)(3), and (b)(4), the standards of Rule R315-266 do not apply to a new hazardous waste boiler or industrial furnace unit that becomes subject to RCRA permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing hazardous waste boiler or industrial furnace unit demonstrates compliance with the maximum achievable control technology (MACT) requirements of Subsection R307-214-2(39), which incorporates 40 CFR 63, subpart EEE, by conducting a comprehensive performance test and submitting to the Director a Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(d),which are incorporated by Subsection R307-214-2(29), documenting compliance with the requirements of Subsection R307-214-2(29), which incorporates 40 CFR 63, subpart EEE. Nevertheless, even after this demonstration of compliance with the MACT standards, RCRA permit conditions that were based on the standards of Rule R315-266 shall continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.

(2) The following standards continue to apply:

(i) If you elect to comply with Subsection R315-270-235(a)(1)(i) to minimize emissions of toxic compounds from startup, shutdown, and malfunction events, Subsection R315-266-102(e)(1) requiring operations in accordance with the operating requirements specified in the permit at all times that hazardous waste is in the unit, and Subsection R315-266-102(e)(2)(iii) requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes. These provisions apply only during startup, shutdown, and malfunction events;

(ii) The closure requirements of Subsections R315-266-102(e)(11) and 103(l);

(iii) The standards for direct transfer of Section R315-266-111;

(iv) The standards for regulation of residues of Section R315-266-112; and

(v) The applicable requirements of Sections R315-264-1 through 151, 1050 through 1065 and 1080 through 1090 and 40 CFR 265.1 through 150, 1050 through 1064, and 1080 through 1090, which are adopted by reference.

(3) If you own or operate a boiler or hydrochloric acid production furnace that is an area source under 40 CFR 63.2 and you elect not to comply with the emission standards under 40 CFR 63.1216, 63.1217, and 63.1218 for particulate matter, semivolatile and low volatile metals, and total chlorine, you also remain subject to:

(i) Section R315-266-105-Standards to control particulate matter;

(ii) Section R315-266-106-Standards to control metals emissions, except for mercury; and

(iii) Section R315-266-107-Standards to control hydrogen chloride and chlorine gas.

(4) The particulate matter standard of Section R315-266-105 remains in effect for boilers that elect to comply with the alternative to the particulate matter standard under 40 CFR 63.1216(e) and 63.1217(e).

(c) The following hazardous wastes and facilities are not subject to regulation under Sections R315-266-100 through 112:

(1) Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in Sections R315-261-20 through 24. Such used oil is subject to regulation under Rule R315-15;

(2) Gas recovered from hazardous or solid waste landfills when such gas is burned for energy recovery;

(3) Hazardous wastes that are exempt from regulation under Section R315-261-4 and Subsections R315-261-6(a)(3)(iii) and (iv), and hazardous wastes that are subject to the special requirements for conditionally exempt small quantity generators under Section R315-261-5; and

(4) Coke ovens, if the only hazardous waste burned is EPA Hazardous Waste No. K087, decanter tank tar sludge from coking operations.

(d) Owners and operators of smelting, melting, and refining furnaces, including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces, but not including cement kilns, aggregate kilns, or halogen acid furnaces burning hazardous waste, that process hazardous waste solely for metal recovery are conditionally exempt from regulation under Sections R315-266-100 through 112, except for Sections R315-266-101 and 266-112.

(1) To be exempt from Sections R315-266-102 through 111, an owner or operator of a metal recovery furnace or mercury recovery furnace shall comply with the following requirements, except that an owner or operator of a lead or a nickel-chromium recovery furnace, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, shall comply with the requirements of Subsection R315-266-100(d)(3), and owners or operators of lead recovery furnaces that are subject to regulation under the Secondary Lead Smelting NESHAP shall comply with the requirements of Subsection R315-266-100(h).

(i) Provide a one-time written notice to the Director indicating the following:

(A) The owner or operator claims exemption under Subsection R315-266-100(d);

(B) The hazardous waste is burned solely for metal recovery consistent with the provisions of Subsection R315-266-100(d)(2);

(C) The hazardous waste contains recoverable levels of metals; and

(D) The owner or operator shall comply with the sampling and analysis and recordkeeping requirements of Subsection R315-266-100(d);

(ii) Sample and analyze the hazardous waste and other feedstocks as necessary to comply with the requirements of Subsection R315-266-100(d) by using appropriate methods; and

(iii) Maintain at the facility for at least three years records to document compliance with the provisions of Subsection R315-266-100(d) including limits on levels of toxic organic constituents and Btu value of the waste, and levels of recoverable metals in the hazardous waste compared to normal nonhazardous waste feedstocks.

(2) A hazardous waste meeting either of the following criteria is not processed solely for metal recovery:

(i) The hazardous waste has a total concentration of organic compounds listed in Rule R315-261, appendix VIII, exceeding 500 ppm by weight, as-fired, and so is considered to be burned for destruction. The concentration of organic compounds in a waste as-generated may be reduced to the 500 ppm limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the 500 ppm limit is prohibited and documentation that the waste has not been impermissibly diluted shall be retained in the records required by Subsection R315-266-100(d)(1)(iii); or

(ii) The hazardous waste has a heating value of 5,000 Btu/lb or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the 5,000 Btu/lb limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the 5,000 Btu/lb limit is prohibited and documentation that the waste has not been impermissibly diluted shall be retained in the records required by Subsection R315-266-100(d)(1)(iii).

(3) To be exempt from Sections R315-266-102 through 111, an owner or operator of a lead or nickel-chromium or mercury recovery furnace, except for owners or operators of lead recovery furnaces subject to regulation under the Secondary Lead Smelting NESHAP, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, shall provide a one-time written notice to the Director identifying each hazardous waste burned and specifying whether the owner or operator claims an exemption for each waste under Subsection R315-266-100(d)(3) or Subsection R315-266-100(d)(1). The owners or operator shall comply with the requirements of Subsection R315-266-100(d)(1) for those wastes claimed to be exempt under Subsection R315-266-100(d)(1) and shall comply with the requirements below for those wastes claimed to be exempt under Subsection R315-266-100(d)(3).

(i) The hazardous wastes listed in appendices XI, XII, and XIII, of Rule R315-266, and baghouse bags used to capture metallic dusts emitted by steel manufacturing are exempt from the requirements of Subsection R315-266-100(d)(1), provided that:

(A) A waste listed in appendix XI of Rule R315-266 shall contain recoverable levels of lead, a waste listed in appendix XII of Rule R315-266 shall contain recoverable levels of nickel or chromium, a waste listed in appendix XIII of Rule R315-266 shall contain recoverable levels of mercury and contain less than 500 ppm of Rule R315-261, appendix VIII organic constituents, and baghouse bags used to capture metallic dusts emitted by steel manufacturing shall contain recoverable levels of metal; and

(B) The waste does not exhibit the Toxicity Characteristic of Section R315-261-24 for an organic constituent; and

(C) The waste is not a hazardous waste listed in Sections R315-261-30 through 35 because it is listed for an organic constituent as identified in appendix VII of Rule R315-261; and

(D) The owner or operator certifies in the one-time notice that hazardous waste is burned under the provisions of Subsection R315-266-100(d)(3) and that sampling and analysis will be conducted or other information will be obtained as necessary to ensure continued compliance with these requirements. Sampling and analysis shall be conducted according to Subsection R315-266-100(d)(1)(ii) and records to document compliance with Subsection R315-266-100(d)(3) shall be kept for at least three years.

(ii) The Director may decide on a case-by-case basis that the toxic organic constituents in a material listed in appendix XI, XII, or XIII of Rule R315-266 that contains a total concentration of more than 500 ppm toxic organic compounds listed in appendix VIII, of Rule R315-261, may pose a hazard to human health and the environment when burned in a metal recovery furnace exempt from the requirements of Sections R315-266-100 through 112. In that situation, after adequate notice and opportunity for comment, the metal recovery furnace shall become subject to the requirements of Sections R315-266-100 through 112 when burning that material. In making the hazard determination, the Director shall consider the following factors:

(A) The concentration and toxicity of organic constituents in the material; and

(B) The level of destruction of toxic organic constituents provided by the furnace; and

(C) Whether the acceptable ambient levels established in appendices IV or V of Rule R315-266 may be exceeded for any toxic organic compound that may be emitted based on dispersion modeling to predict the maximum annual average off-site ground level concentration.

(e) The standards for direct transfer operations under Section R315-266-111 apply only to facilities subject to the permit standards of Section R315-266-102 or the interim status standards of Section R315-266-103.

(f) The management standards for residues under Section R315-266-112 apply to any boiler or industrial furnace burning hazardous waste.

(g) Owners and operators of smelting, melting, and refining furnaces, including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces, that process hazardous waste for recovery of economically significant amounts of the precious metals gold, silver, platinum, palladium, iridium, osmium, rhodium, or ruthenium, or any combination of these are conditionally exempt from regulation under Sections R315-266-100 through 111. To be exempt from Sections R315-266-101 through 111, an owner or operator shall:

(1) Provide a one-time written notice to the Director indicating the following:

(i) The owner or operator claims exemption under Subsection R315-266-100(g);

(ii) The hazardous waste is burned for legitimate recovery of precious metal; and

(iii) The owner or operator shall comply with the sampling and analysis and recordkeeping requirements of Subsection R315-266-100(g); and

(2) Sample and analyze the hazardous waste as necessary to document that the waste contains economically significant amounts of the metals and that the treatment recovers economically significant amounts of precious metal; and

(3) Maintain at the facility for at least three years records to document that all hazardous wastes burned are burned for recovery of economically significant amounts of precious metal.

(h) Starting June 23, 1997, owners or operators of lead recovery furnaces that process hazardous waste for recovery of lead and that are subject to regulation under the Secondary Lead Smelting NESHAP, are conditionally exempt from regulation under Section R315-266-100 through 112, except for Subsection R315-266-101. To be exempt, an owner or operator shall provide a one-time notice to the Director identifying each hazardous waste burned and specifying that the owner or operator claims an exemption under Subsection R315-266-100(h). The notice also shall state that the waste burned has a total concentration of non-metal compounds listed in Rule R315-261, appendix VIII, of less than 500 ppm by weight, as fired and as provided in Subsection R315-266-100(d)(2)(i), or is listed in appendix XI to Rule R315-266.

R315-266-101. Hazardous Waste Burned in Boilers and Industrial Furnaces - Management prior to burning.

(a) Generators. Generators of hazardous waste that is burned in a boiler or industrial furnace are subject to Rule R315-262.

(b) Transporters. Transporters of hazardous waste that is burned in a boiler or industrial furnace are subject to Rule R315-263.

(c) Storage and treatment facilities.

(1) Owners and operators of facilities that store or treat hazardous waste that is burned in a boiler or

industrial furnace are subject to the applicable provisions of Rules R315-264, 265 and 270, except as provided by Subsection R315-266-101(c)(2). These standards apply to storage and treatment by the burner as well as to storage and treatment facilities operated by intermediaries, processors, blenders, distributors, etc., between the generator and the burner.

(2) Owners and operators of facilities that burn, in an onsite boiler or industrial furnace exempt from regulation under the small quantity burner provisions of Section R315-266-108, hazardous waste that they generate are exempt from the regulations of Rules R315-264, 265 and 270 applicable to storage units for those storage units that store mixtures of hazardous waste and the primary fuel to the boiler or industrial furnace in tanks that feed the fuel mixture directly to the burner. Storage of hazardous waste prior to mixing with the primary fuel is subject to regulation as prescribed in Subsection R315-266-101(c)(1).

R315-266-102. Hazardous Waste Burned in Boilers and Industrial Furnaces - Permit standards for burners.

(a) Applicability

(1) General. Owners and operators of boilers and industrial furnaces burning hazardous waste and not operating under interim status shall comply with the requirements of Section R315-266-102 and Sections R315-270-22 and 66, unless exempt under the small quantity burner exemption of Subsections R315-266-108.

(2) Applicability of Rule R315-264 standards. Owners and operators of boilers and industrial furnaces that burn hazardous waste are subject to the following provisions of Rule R315-264, except as provided otherwise by Sections R315-266-100 through 112:

(i) Section R315-264-4, General;

(ii) Sections R315-264-11 through 18, General facility standards;

(iii) Sections R315-264-31 through 37, Preparedness and prevention;

(iv) Sections R315-264-51 through 56, Contingency plan and emergency procedures;

(v) The applicable provisions of Sections R315-264-71 through 77, Manifest system, recordkeeping, and reporting;

(vi) Sections R315-264-90 and 101, Releases from Solid Waste Management Units;

(vii) Sections R315-264-111 through 115, Closure and post-closure;

(viii) Sections R315-264-141 through 143 and 147 through 151, Financial requirements; except that States and the Federal government are exempt from the requirements of Sections R315-264-140 through 151; and

(ix) Sections R315-264-1050 through 1065, Air emission standards for equipment leaks, except Subsections R315-264-1050(a).

(b) Hazardous waste analysis.

(1) The owner or operator shall provide an analysis of the hazardous waste that quantifies the concentration of any constituent identified in appendix VIII of Rule R315-261 that may reasonably be expected to be in the waste. Such constituents shall be identified and quantified if present, at levels detectable by using appropriate analytical procedures. The appendix VIII, Rule R315-261 constituents excluded from this analysis shall be identified and the basis for their exclusion explained. This analysis shall be used to provide all information required by Sections R315-266-100 through 112 and Subsections R315-270-22 and 66 and to enable the permit writer to prescribe such permit conditions as necessary to protect human health and the environment. Such analysis shall be included as a portion of the part B permit application, or, for facilities operating under the interim status standards of Sections R315-266-100 through 112, as a portion of the trial burn plan that may be submitted before the part B application under provisions of Subsections R315-270-66(g) as well as any other analysis required by the permit authority in preparing the permit. Owners and operators of boilers and industrial furnaces not operating under the interim status standards shall provide the information required by Subsections R315-270-22 or 66(c) in the part B application to the greatest extent possible.

(2) Throughout normal operation, the owner or operator shall conduct sampling and analysis as necessary to ensure that the hazardous waste, other fuels, and industrial furnace feedstocks fired into the boiler or industrial furnace are within the physical and chemical composition limits specified in the permit.

(c) Emissions standards. Owners and operators shall comply with emissions standards provided by Subsections R315-266-104 through 107.

(d) Permits.

(1) The owner or operator may burn only hazardous wastes specified in the facility permit and only under the operating conditions specified under Subsection R315-266-102(e), except in approved trial burns under the conditions specified in Section R315-270-66.

(2) Hazardous wastes not specified in the permit may not be burned until operating conditions have been specified under a new permit or permit modification, as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with part B of a permit application under Section R315-270-22.

(3) Boilers and industrial furnaces operating under the interim status standards of Section R315-266-103 are permitted under procedures provided by Subsections R315-270-66(g).

(4) A permit for a new boiler or industrial furnace, those boilers and industrial furnaces not operating under the interim status standards, shall establish appropriate conditions for each of the applicable requirements of Section R315-266-102, including but not limited to allowable

hazardous waste firing rates and operating conditions necessary to meet the requirements of Subsection R315-266-102(e), in order to comply with the following standards:

(i) For the period beginning with initial introduction of hazardous waste and ending with initiation of the trial burn, and only for the minimum time required to bring the device to a point of operational readiness to conduct a trial burn, not to exceed a duration of 720 hours operating time when burning hazardous waste, the operating requirements shall be those most likely to ensure compliance with the emission standards of Sections R315-266-104 through 107, based on the Director's engineering judgment. If the applicant is seeking a waiver from a trial burn to demonstrate conformance with a particular emission standard, the operating requirements during this initial period of operation shall include those specified by the applicable provisions of Sections R315-266-104, 105, 106, or 107. The Director may extend the duration of this period for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.

(ii) For the duration of the trial burn, the operating requirements shall be sufficient to demonstrate compliance with the emissions standards of Sections R315-266-104 through 107 and shall be in accordance with the approved trial burn plan;

(iii) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, submission of the trial burn results by the applicant, review of the trial burn results and modification of the facility permit by the Director to reflect the trial burn results, the operating requirements shall be those most likely to ensure compliance with the emission standards Sections R315-266-104 through 107 based on the Director's engineering judgment.

(iv) For the remaining duration of the permit, the operating requirements shall be those demonstrated in a trial burn or by alternative data specified in Section R315-270-22, as sufficient to ensure compliance with the emissions standards of Sections R315-266-104 through 107.

(e) Operating requirements

(1) General. A boiler or industrial furnace burning hazardous waste shall be operated in accordance with the operating requirements specified in the permit at all times where there is hazardous waste in the unit.

(2) Requirements to ensure compliance with the organic emissions standards

(i) DRE standard. Operating conditions shall be specified either on a case-by-case basis for each hazardous waste burned as those demonstrated, in a trial burn or by alternative data as specified in Sections R315-270-22, to be sufficient to comply with the destruction and removal efficiency (DRE) performance standard of Subsection R315-266-104(a) or as those special operating requirements

provided by Subsection R315-266-104(a)(4) for the waiver of the DRE trial burn. When the DRE trial burn is not waived under Subsection R315-266-104(a)(4), each set of operating requirements shall specify the composition of the hazardous waste, including acceptable variations in the physical and chemical properties of the hazardous waste which will not affect compliance with the DRE performance standard, to which the operating requirements apply. For each such hazardous waste, the permit shall specify acceptable operating limits including, but not limited to, the following conditions as appropriate:

(A) Feed rate of hazardous waste and other fuels measured and specified as prescribed in Subsection R315-266-102(e)(6);

(B) Minimum and maximum device production rate when producing normal product expressed in appropriate units, measured and specified as prescribed in Subsection R315-266-102(e)(6);

(C) Appropriate controls of the hazardous waste firing system;

(D) Allowable variation in boiler and industrial furnace system design or operating procedures;

(E) Minimum combustion gas temperature measured at a location indicative of combustion chamber temperature, measured and specified as prescribed in Subsection R315-266-102(e)(6);

(F) An appropriate indicator of combustion gas velocity, measured and specified as prescribed in Subsection R315-266-102(e)(6), unless documentation is provided under Section R315-270-66 demonstrating adequate combustion gas residence time; and

(G) Such other operating requirements as are necessary to ensure that the DRE performance standard of Subsection R315-266-104(a) is met.

(ii) Carbon monoxide and hydrocarbon standards. The permit shall incorporate a carbon monoxide (CO) limit and, as appropriate, a hydrocarbon (HC) limit as provided by Subsections R315-266-104(b), (c), (d), (e) and (f). The permit limits shall be specified as follows:

(A) When complying with the CO standard of Subsections R315-266-104(b)(1), the permit limit is 100 ppmv;

(B) When complying with the alternative CO standard under Subsection R315-266-104(c), the permit limit for CO is based on the trial burn and is established as the average over all valid runs of the highest hourly rolling average CO level of each run, and the permit limit for HC is 20 ppmv, as defined in Subsection R315-266-104(c)(1), except as provided in Subsection R315-266-104(f).

(C) When complying with the alternative HC limit for industrial furnaces under Subsection R315-266-104(f), the permit limit for HC and CO is the baseline level when hazardous waste is not burned as specified by Subsection R315-266-104(f).

(iii) Start-up and shut-down. During start-up and shut-down of the boiler or industrial furnace, hazardous waste, except waste fed solely as an ingredient under the Tier I, or adjusted Tier I, feed rate screening limits for metals and chloride/chlorine, and except low risk waste exempt from the trial burn requirements under Subsections R315-266-104(a)(5) and R315-266-105through 107, shall not be fed into the device unless the device is operating within the conditions of operation specified in the permit.

(3) Requirements to ensure conformance with the particulate standard.

(i) Except as provided in Subsections R315-266-102(e)(3)(ii) and (iii), the permit shall specify the following operating requirements to ensure conformance with the particulate standard specified in Section R315-266-105:

(A) Total ash feed rate to the device from hazardous waste, other fuels, and industrial furnace feedstocks, measured and specified as prescribed in Subsection R315-266-102(e)(6);

(B) Maximum device production rate when producing normal product expressed in appropriate units, and measured and specified as prescribed in Subsection R315-266-102(e)(6);

(C) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(D) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(E) Such other operating requirements as are necessary to ensure that the particulate standard in Subsection R315-266-105(a) is met.

(ii) Permit conditions to ensure conformance with the particulate matter standard shall not be provided for facilities exempt from the particulate matter standard under Subsection R315-266-105(b);

(iii) For cement kilns and light-weight aggregate kilns, permit conditions to ensure compliance with the particulate standard shall not limit the ash content of hazardous waste or other feed materials.

(4) Requirements to ensure conformance with the metals emissions standard.

(i) For conformance with the Tier I, or adjusted Tier I, metals feed rate screening limits of Subsections R315-266-106(b) or (e), the permit shall specify the following operating requirements:

(A) Total feed rate of each metal in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified under provisions of Subsection R315-266-102(e)(6);

(B) Total feed rate of hazardous waste measured and specified as prescribed in Subsection R315-266-102(e)(6);

(C) A sampling and metals analysis program for the hazardous waste, other fuels, and industrial furnace feedstocks;

(ii) For conformance with the Tier II metals emission rate screening limits under Subsection R315-266-106(c) and the Tier III metals controls under Subsection R315-266-106(d), the permit shall specify the following operating requirements:

(A) Maximum emission rate for each metal specified as the average emission rate during the trial burn;

(B) Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in Subsection R315-266-102(e)(6)(i);

(C) Feed rate of each metal in the following feedstreams, measured and specified as prescribed in Subsection R315-266-102(e)(6):

(I) Total feedstreams;

(II) Total hazardous waste feed; and

(III) Total pumpable hazardous waste feed;

(D) Total feed rate of chlorine and chloride in total feedstreams measured and specified as prescribed in Subsection R315-266-102(e)(6);

(E) Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in Subsection R315-266-102(e)(6);

(F) Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in Subsection R315-266-102(e)(6);

(G) Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in Subsection R315-266-102(e)(6);

(H) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(I) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(J) Such other operating requirements as are necessary to ensure that the metals standards under Subsections R315-266-106(c) or 106(d) are met.

(iii) For conformance with an alternative implementation approach approved by the Director under Subsection R315-266-106(f), the permit shall specify the following operating requirements:

(A) Maximum emission rate for each metal specified as the average emission rate during the trial burn;

(B) Feed rate of total hazardous waste and pumpable hazardous waste, each measured and specified as prescribed in Subsection R315-266-102(e)(6)(i);

(C) Feed rate of each metal in the following feedstreams, measured and specified as prescribed in Subsection R315-266-102(e)(6):

(I) Total hazardous waste feed; and

(II) Total pumpable hazardous waste feed;

(D) Total feed rate of chlorine and chloride in total feedstreams measured and specified prescribed in Subsection R315-266-102(e)(6);

(E) Maximum combustion gas temperature measured at a location indicative of combustion chamber temperature, and measured and specified as prescribed in Subsection R315-266-102(e)(6);

(F) Maximum flue gas temperature at the inlet to the particulate matter air pollution control system measured and specified as prescribed in Subsection R315-266-102(e)(6);

(G) Maximum device production rate when producing normal product expressed in appropriate units and measured and specified as prescribed in Subsection R315-266-102(e)(6);

(H) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(I) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(J) Such other operating requirements as are necessary to ensure that the metals standards under Subsections R315-266-106(c) or 106(d) are met.

(5) Requirements to ensure conformance with the hydrogen chloride and chlorine gas standards.

(i) For conformance with the Tier I total chloride and chlorine feed rate screening limits of Subsection R315-266-107(b)(1), the permit shall specify the following operating requirements:

(A) Feed rate of total chloride and chlorine in hazardous waste, other fuels, and industrial furnace feedstocks measured and specified as prescribed in Subsection R315-266-102(e)(6);

(B) Feed rate of total hazardous waste measured and specified as prescribed in Subsection R315-266-102(e)(6);

(C) A sampling and analysis program for total chloride and chlorine for the hazardous waste, other fuels, and industrial furnace feedstocks;

(ii) For conformance with the Tier II HCl and Cl_2 emission rate screening limits under Subsection R315-266-107(b)(2) and the Tier III HCl and Cl_2 controls under Subsection R315-266-107(c), the permit shall specify the following operating requirements:

(A) Maximum emission rate for HCl and for Cl_2 specified as the average emission rate during the trial burn;

(B) Feed rate of total hazardous waste measured and specified as prescribed in Subsection R315-266-102(e)(6);

(C) Total feed rate of chlorine and chloride in total feedstreams, measured and specified as prescribed in Subsection R315-266-102(e)(6);

(D) Maximum device production rate when producing normal product expressed in appropriate units, measured and specified as prescribed in Subsection R315-266-102(e)(6);

(E) Appropriate controls on operation and maintenance of the hazardous waste firing system and any air pollution control system;

(F) Allowable variation in boiler and industrial furnace system design including any air pollution control system or operating procedures; and

(G) Such other operating requirements as are necessary to ensure that the HCl and Cl_2 standards under Subsections R315-266-107 (b)(2) or (c) are met.

(6) Measuring parameters and establishing limits based on trial burn data

(i) General requirements. As specified in Subsections R315-266-102(e)(2) through (e)(5), each operating parameter shall be measured, and permit limits on the parameter shall be established, according to either of the following procedures:

(A) Instantaneous limits. A parameter may be measured and recorded on an instantaneous basis, i.e., the value that occurs at any time, and the permit limit specified as the time-weighted average during all valid runs of the trial burn; or

(B) Hourly rolling average. The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(I) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

(II) An hourly rolling average is the arithmetic mean of the 60 most recent 1-minute average values recorded by the continuous monitoring system.

(III) The permit limit for the parameter shall be established based on trial burn data as the average over all valid test runs of the highest hourly rolling average value for each run.

(ii) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals, i.e., arsenic, beryllium, cadmium and chromium, and lead may be established either on an hourly rolling average basis as prescribed by Subsection R315-266-102(e)(6)(i) or on, up to, a 24 hour rolling average basis. If the owner or operator elects to use an average period from 2 to 24 hours:

(A) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

(B) The continuous monitor shall meet the following specifications:

(I) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

(I) The rolling average for the selected averaging period is defined as the arithmetic mean of one hour block averages for the averaging period. A one hour block average is the arithmetic mean of the one minute averages recorded during the 60-minute period beginning at one minute after the beginning of the preceding clock hour; and

(C) The permit limit for the feed rate of each metal shall be established based on trial burn data as the average over all valid test runs of the highest hourly rolling average feed rate for each run.

(iii) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance, i.e., metals, chloride/chlorine, and ash, in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream shall be monitored under the continuous monitoring requirements of Subsections R315-266-102(e)(6)(i) and (ii).

(iv) Conduct of trial burn testing.

(A) If compliance with all applicable emissions standards of Sections R315-266-104 through 107 is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards shall be as close as possible to the original operating conditions.

(B) Prior to obtaining test data for purposes of demonstrating compliance with the emissions standards of Sections R315-266-104 through 107 or establishing limits on operating parameters under Section R315-266-102, the facility shall operate under trial burn conditions for a sufficient period to reach steady-state operations. The Director may determine, however, that industrial furnaces that recycle collected particulate matter back into the furnace and that comply with an alternative implementation approach for metals under Subsection R315-266-106(f) need not reach steady state conditions with respect to the flow of metals in the system prior to beginning compliance testing for metals emissions.

(C) Trial burn data on the level of an operating parameter for which a limit shall be established in the permit shall be obtained during emissions sampling for the pollutant(s), i.e., metals, PM, HCl/Cl_2, organic compounds, for which the parameter shall be established as specified by Subsection R315-266-102(e).

(7) General requirements

(i) Fugitive emissions. Fugitive emissions shall be controlled by:

(A) Keeping the combustion zone totally sealed against fugitive emissions; or

(B) Maintaining the combustion zone pressure lower than atmospheric pressure; or

(C) An alternate means of control demonstrated, with part B of the permit application, to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(ii) Automatic waste feed cutoff. A boiler or industrial furnace shall be operated with a functioning system that automatically cuts off the hazardous waste feed when operating conditions deviate from those established under Section R315-266-102. The Director may limit the number of cutoffs per an operating period on a case-by-case basis. In addition:

(A) The permit limit for, the indicator of, minimum combustion chamber temperature shall be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber,

(B) Exhaust gases shall be ducted to the air pollution control system operated in accordance with the permit requirements while hazardous waste or hazardous waste residues remain in the combustion chamber; and

(C) Operating parameters for which permit limits are established shall continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the permit limits. For parameters that may be monitored on an instantaneous basis, the Director shall establish a minimum period of time after a waste feed cutoff during which the parameter shall not exceed the permit limit before the hazardous waste feed may be restarted.

(iii) Changes. A boiler or industrial furnace shall cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits as specified in the permit.

(8) Monitoring and Inspections.

(i) The owner or operator shall monitor and record the following, at a minimum, while burning hazardous waste:

(A) If specified by the permit, feed rates and composition of hazardous waste, other fuels, and industrial furnace feedstocks, and feed rates of ash, metals, and total chloride and chlorine;

(B) If specified by the permit, carbon monoxide (CO), hydrocarbons (HC), and oxygen on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with operating requirements specified in Subsection R315-266-102(e)(2)(ii). CO, HC, and oxygen monitors shall be installed, operated, and maintained in accordance with methods specified in appendix IX of Rule R315-266.

(C) Upon the request of the Director, sampling and analysis of the hazardous waste, and other fuels and industrial furnace feedstocks as appropriate, residues, and exhaust emissions shall be conducted to verify that the

operating requirements established in the permit achieve the applicable standards of Sections R315-266-104 through 107.

(ii) All monitors shall record data in units corresponding to the permit limit unless otherwise specified in the permit.

(iii) The boiler or industrial furnace and associated equipment, pumps, valves, pipes, fuel storage tanks, etc., shall be subjected to thorough visual inspection when it contains hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

(iv) The automatic hazardous waste feed cutoff system and associated alarms shall be tested at least once every 7 days when hazardous waste is burned to verify operability, unless the applicant demonstrates to the Director that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. At a minimum, operational testing shall be conducted at least once every 30 days.

(v) These monitoring and inspection data shall be recorded and the records shall be placed in the operating record required by Section R315-264-73.

(9) Direct transfer to the burner. If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator shall comply with Section R315-266-111.

(10) Recordkeeping. The owner or operator shall maintain in the operating record of the facility all information and data required by Section R315-266-102 for five years.

(11) Closure. At closure, the owner or operator shall remove all hazardous waste and hazardous waste residues, including, but not limited to, ash, scrubber waters, and scrubber sludges, from the boiler or industrial furnace.

R315-266-103. Hazardous Waste Burned in Boilers and Industrial Furnaces - Interim status standards for burners.

(a) Purpose, scope, applicability

(1) General.

(i) The purpose of Section R315-266-103 is to establish minimum national standards for owners and operators of “existing” boilers and industrial furnaces that burn hazardous waste where such standards define the acceptable management of hazardous waste during the period of interim status. The standards of Section R315-266-103 apply to owners and operators of existing facilities until either a permit is issued under Section R315-266-102(d) or until closure responsibilities identified in Section R315-266-103 are fulfilled.

(ii) Existing or in existence means a boiler or industrial furnace that on or before August 21, 1991 is either in operation burning or processing hazardous waste or for which construction, including the ancillary facilities to burn or to process the hazardous waste, has commenced. A facility has commenced construction if the owner or operator

has obtained the Federal, State, and local approvals or permits necessary to begin physical construction; and either:

(A) A continuous on-site, physical construction program has begun; or

(B) The owner or operator has entered into contractual obligations-which cannot be canceled or modified without substantial loss-for physical construction of the facility to be completed within a reasonable time.

(iii) If a boiler or industrial furnace is located at a facility that already has a permit or interim status, then the facility shall comply with the applicable regulations dealing with permit modifications in Section R315-270-42 or changes in interim status in Section R315-270-72.

(2) Exemptions. The requirements of Section R315-266-103 do not apply to hazardous waste and facilities exempt under Subsection R315-266-100(b), or Section R315-266-108.

(3) Prohibition on burning dioxin-listed wastes. The following hazardous waste listed for dioxin and hazardous waste derived from any of these wastes may not be burned in a boiler or industrial furnace operating under interim status: F020, F021, F022, F023, F026, and F027.

(4) Applicability of Rule R315-265 standards. Owners and operators of boilers and industrial furnaces that burn hazardous waste and are operating under interim status are subject to the following provisions of Rule R315-265, except as provided otherwise by Section R315-266-103:

(i) 40 CFR 265.4, which is adopted by reference, General;

(ii) 40 CFR 265.11 through 17, which are adopted by reference, General facility standards;

(iii) 40 CFR 265.31 through 37, which are adopted by reference, Preparedness and prevention;

(iv) 40 CFR 265.51 through 56, which are adopted by reference, Contingency plan and emergency procedures;

(v) 40 CFR 265.71 through 77, which are adopted by reference, Manifest system, recordkeeping, and reporting, except that 40 CFR 265.265.71, 72, and 76, which are incorporated by reference in Rule R315-265, do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources;

(vi) 40 CFR 265.111 through 115, which are adopted by reference, Closure and post-closure;

(vii) 40 CFR 265.141, 142, 143, and 147 through 150, which are adopted by reference, Financial requirements, except that States and the Federal government are exempt from the requirements of 40 CFR 265.140 through 150, which are adopted by reference; and

(viii) 40 CFR 265.1050 through 1064, which are adopted by reference, Air emission standards for equipment leaks, except 265-1050(a).

(5) Special requirements for furnaces. The following controls apply during interim status to industrial furnaces, e.g., kilns, cupolas, that feed hazardous waste for a

purpose other than solely as an ingredient, see Subsection R315-266-103(a)(5)(ii), at any location other than the hot end where products are normally discharged or where fuels are normally fired:

(i) Controls.

(A) The hazardous waste shall be fed at a location where combustion gas temperatures are at least 1800 °F;

(B) The owner or operator shall determine that adequate oxygen is present in combustion gases to combust organic constituents in the waste and retain documentation of such determination in the facility record;

(C) For cement kiln systems, the hazardous waste shall be fed into the kiln; and

(D) The hydrocarbon controls of Subsections R315-266-104(c) or 103(c)(5) apply upon certification of compliance under Subsection R315-266-103(c) irrespective of the CO level achieved during the compliance test.

(ii) Burning hazardous waste solely as an ingredient. A hazardous waste is burned for a purpose other than solely as an ingredient if it meets either of these criteria:

(A) The hazardous waste has a total concentration of nonmetal compounds listed in Rule R315-261, appendix VIII, exceeding 500 ppm by weight, as-fired, and so is considered to be burned for destruction. The concentration of nonmetal compounds in a waste as-generated may be reduced to the 500 ppm limit by bona fide treatment that removes or destroys nonmetal constituents. Blending for dilution to meet the 500 ppm limit is prohibited and documentation that the waste has not been impermissibly diluted shall be retained in the facility record; or

(B) The hazardous waste has a heating value of 5,000 Btu/lb or more, as-fired, and so is considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the 5,000 Btu/lb limit by bona fide treatment that removes or destroys organic constituents. Blending to augment the heating value to meet the 5,000 Btu/lb limit is prohibited and documentation that the waste has not been impermissibly blended shall be retained in the facility record.

(6) Restrictions on burning hazardous waste that is not a fuel. Prior to certification of compliance under Subsection R315-266-103(c), owners and operators shall not feed hazardous waste that has a heating value less than 5,000 Btu/lb, as-generated, except that the heating value of a waste as-generated may be increased to above the 5,000 Btu/lb limit by bona fide treatment; however, blending to augment the heating value to meet the 5,000 Btu/lb limit is prohibited and records shall be kept to document that impermissible blending has not occurred, in a boiler or industrial furnace, except that:

(i) Hazardous waste may be burned solely as an ingredient; or

(ii) Hazardous waste may be burned for purposes of compliance testing, or testing prior to compliance testing, for a total period of time not to exceed 720 hours; or

(iii) Such waste may be burned if the Director has documentation to show that, prior to August 21, 1991:

(A) The boiler or industrial furnace is operating under the interim status standards for incinerators provided by 40 CFR 265.340 through 352, which are adopted by reference, or the interim status standards for thermal treatment units provided by 40 CFR 265.370 through 383, which are adopted by reference; and

(B) The boiler or industrial furnace met the interim status eligibility requirements under Section R315-270-70 for 40 CFR 265.340 through 383, which are adopted by reference; and

(C) Hazardous waste with a heating value less than 5,000 Btu/lb was burned prior to that date; or

(iv) Such waste may be burned in a halogen acid furnace if the waste was burned as an excluded ingredient under Section R315-261-2(e) prior to February 21, 1991 and documentation is kept on file supporting this claim.

(7) Direct transfer to the burner. If hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit, the owner and operator shall comply with Section R315-266-111.

(b) Certification of precompliance

(1) General. The owner or operator shall provide complete and accurate information specified in Subsection R315-266-103(b)(2) to the Director on or before August 21, 1991, and shall establish limits for the operating parameters specified in Subsection R315-266-103(b)(3). Such information is termed a “certification of precompliance” and constitutes a certification that the owner or operator has determined that, when the facility is operated within the limits specified in Subsection R315-266-103(b)(3), the owner or operator believes that, using best engineering judgment, emissions of particulate matter, metals, and HCl and Cl_2 are not likely to exceed the limits provided by Sections R315-266-105 through 107. The facility may burn hazardous waste only under the operating conditions that the owner or operator establishes under Subsection R315-266-103(b)(3) until the owner or operator submits a revised certification of precompliance under Subsection R315-266-103(b)(8) or a certification of compliance under Subsection R315-266-103(c), or until a permit is issued.

(2) Information required. The following information shall be submitted with the certification of precompliance to support the determination that the limits established for the operating parameters identified in Subsection R315-266-103(b)(3) are not likely to result in an exceedance of the allowable emission rates for particulate matter, metals, and HCl and Cl_2.

(i) General facility information:

(A) EPA facility ID number;

(B) Facility name, contact person, telephone number, and address;

(C) Description of boilers and industrial furnaces burning hazardous waste, including type and capacity of device;

(D) A scaled plot plan showing the entire facility and location of the boilers and industrial furnaces burning hazardous waste; and

(E) A description of the air pollution control system on each device burning hazardous waste, including the temperature of the flue gas at the inlet to the particulate matter control system.

(ii) Except for facilities complying with the Tier I or Adjusted Tier I feed rate screening limits for metals or total chlorine and chloride provided by Subsections R315-266-106(b) or (e) and 107(b)(1) or (e), respectively, the estimated uncontrolled, at the inlet to the air pollution control system, emissions of particulate matter, each metal controlled by Section R315-266-106, and hydrogen chloride and chlorine, and the following information to support such determinations:

(A) The feed rate (lb/hr) of ash, chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feedstream, hazardous waste, other fuels, industrial furnace feedstocks;

(B) The estimated partitioning factor to the combustion gas for the materials identified in Subsection R315-266-103(b)(2)(ii)(A) and the basis for the estimate and an estimate of the partitioning to HCl and Cl_2 of total chloride and chlorine in feed materials. To estimate the partitioning factor, the owner or operator shall use either best engineering judgment or the procedures specified in appendix IX of Rule R315-266.

(C) For industrial furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions standards under Subsection R315-266-103(c)(3)(ii)(A), the estimated enrichment factor for each metal. To estimate the enrichment factor, the owner or operator shall use either best engineering judgment or the procedures specified in "Alternative Methodology for Implementing Metals Controls" in appendix IX Rule R315-266.

(D) If best engineering judgment is used to estimate partitioning factors or enrichment factors under Subsections R315-266-103(b)(2)(ii)(B) or (b)(2)(ii)(C) respectively, the basis for the judgment. When best engineering judgment is used to develop or evaluate data or information and make determinations under Section R315-266-103, the determinations shall be made by a qualified, registered professional engineer and a certification of his/her determinations in accordance with Subsection R315-270-11(d) shall be provided in the certification of precompliance.

(iii) For facilities complying with the Tier I or Adjusted Tier I feed rate screening limits for metals or

total chlorine and chloride provided by Subsections R315-266-106(b) or (e) and 107(b)(1) or (e), the feed rate (lb/hr) of total chloride and chlorine, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium in each feed stream, hazardous waste, other fuels, industrial furnace feedstocks.

(iv) For facilities complying with the Tier II or Tier III emission limits for metals or HCl and Cl_2, under Subsections R315-266-106(c) or (d) or 107(b)(2) or (c), the estimated controlled, outlet of the air pollution control system, emissions rates of particulate matter, each metal controlled by Section R315-266-106, and HCl and Cl_2, and the following information to support such determinations:

(A) The estimated air pollution control system (APCS) removal efficiency for particulate matter, HCl, Cl_2, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium.

(B) To estimate APCS removal efficiency, the owner or operator shall use either best engineering judgment or the procedures prescribed in appendix IX of Rule R315-266.

(C) If best engineering judgment is used to estimate APCS removal efficiency, the basis for the judgment. Use of best engineering judgment shall be in conformance with provisions of Subsection R315-266-103(b)(2)(ii)(D).

(v) Determination of allowable emissions rates for HCl, Cl_2, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium, and the following information to support such determinations:

(A) For all facilities:

(I) Physical stack height;

(II) Good engineering practice stack height as defined by 40 CFR 51.100(ii);

(III) Maximum flue gas flow rate;

(IV) Maximum flue gas temperature;

(V) Attach a US Geological Service topographic map, or equivalent, showing the facility location and surrounding land within 5 km of the facility;

(VI) Identify terrain type: complex or noncomplex; and

(VII) Identify land use: urban or rural.

(B) For owners and operators using Tier III site specific dispersion modeling to determine allowable levels under Subsection R315-266-106(d) or 107(c), or adjusted Tier I feed rate screening limits under Subsections R315-266-106(e) or 107(e):

(I) Dispersion model and version used;

(II) Source of meteorological data;

(III) The dilution factor in micrograms per cubic meter per gram per second of emissions for the maximum annual average off-site, unless on-site is required, ground level concentration (MEI location); and

(IV) Indicate the MEI location on the map required under Subsection R315-266-103(b)(2)(v)(A)(5);

(vi) For facilities complying with the Tier II or III emissions rate controls for metals or HCl and Cl_2, a

comparison of the estimated controlled emissions rates determined under Subsection R315-266-103(b)(2)(iv) with the allowable emission rates determined under Subsection R315-266-103(b)(2)(v);

(vii) For facilities complying with the Tier I, or adjusted Tier I, feed rate screening limits for metals or total chloride and chlorine, a comparison of actual feed rates of each metal and total chlorine and chloride determined under Subsection R315-266-103(b)(2)(iii) to the Tier I allowable feed rates; and

(viii) For industrial furnaces that feed hazardous waste for any purpose other than solely as an ingredient, as defined by Subsection R315-266-103(a)(5)(ii), at any location other than the product discharge end of the device, documentation of compliance with the requirements of Subsections R315-266-103(a)(5)(i)(A), (B), and (C).

(ix) For industrial furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions standards under Subsection R315-266-103(c)(3)(ii)(A):

(A) The applicable particulate matter standard in lb/hr; and

(B) The precompliance limit on the concentration of each metal in collected PM.

(3) Limits on operating conditions. The owner and operator shall establish limits on the following parameters consistent with the determinations made under Subsection R315-266-103(b)(2) and certify, under provisions of Subsection R315-266-103(b)(9), to the Director that the facility will operate within the limits during interim status when there is hazardous waste in the unit until revised certification of precompliance under Subsection R315-266-103(b)(8) or certification of compliance under Subsection R315-266-103(c):

(i) Feed rate of total hazardous waste and, unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e), pumpable hazardous waste;

(ii) Feed rate of each metal in the following feed streams:

(A) Total feed streams, except that industrial furnaces that comply with the alternative metals implementation approach under Subsection R315-266-103(b)(4) shall specify limits on the concentration of each metal in collected particulate matter in lieu of feed rate limits for total feedstreams;

(B) Total hazardous waste feed, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e); and

(C) Total pumpable hazardous waste feed, unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e);

(iii) Total feed rate of chlorine and chloride in total feed streams;

(iv) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited; and

(v) Maximum production rate of the device in appropriate units when producing normal product, unless complying with the Tier I or Adjusted Tier I feed rate screening limits for chlorine under Subsections R315-266-107(b)(1) or (e) and for all metals under Subsections R315-266-106(b) or (e), and the uncontrolled particulate emissions do not exceed the standard under Subsection R315-266-105.

(4) Operating requirements for furnaces that recycle PM. Owners and operators of furnaces that recycle collected particulate matter (PM) back into the furnace and that will certify compliance with the metals emissions controls under Subsection R315-266-103(c)(3)(ii)(A) shall comply with the special operating requirements provided in "Alternative Methodology for Implementing Metals Controls" in appendix IX of Rule R315-266.

(5) Measurement of feed rates and production rate

(i) General requirements. Limits on each of the parameters specified in Subsection R315-266-103(b)(3), except for limits on metals concentrations in collected particulate matter (PM) for industrial furnaces that recycle collected PM, shall be established and continuously monitored under either of the following methods:

(A) Instantaneous limits. A limit for a parameter may be established and continuously monitored and recorded on an instantaneous basis, i.e., the value that occurs at any time, not to be exceeded at any time; or

(B) Hourly rolling average limits. A limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(I) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

(II) An hourly rolling average is the arithmetic mean of the 60 most recent 1-minute average values recorded by the continuous monitoring system.

(ii) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals, arsenic, beryllium, cadmium, and chromium, and lead may be established either on an hourly rolling average basis as prescribed by Subsection R315-266-103(b)(5)(i)(B) or on, up to, a 24 hour rolling average basis. If the owner or operator elects to use an averaging period from 2 to 24 hours:

(A) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

(B) The continuous monitor shall meet the following specifications:

(I) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

(II) The rolling average for the selected averaging period is defined as the arithmetic mean of one hour block averages for the averaging period. A one hour block average is the arithmetic mean of the one minute averages recorded during the 60-minute period beginning at one minute after the beginning of preceding clock hour.

(iii) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance, i.e., metals, chloride/chlorine, and ash, in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream shall be monitored under the continuous monitoring requirements of Subsections R315-266-103(b)(5)(i) and (ii).

(6) Public notice requirements at precompliance. On or before August 21, 1991 the owner or operator shall submit a notice with the following information for publication in a major local newspaper of general circulation and send a copy of the notice to the appropriate units of State and local government. The owner and operator shall provide to the Director with the certification of precompliance evidence of submitting the notice for publication. The notice, which shall be entitled "Notice of Certification of Precompliance with Hazardous Waste Burning Requirements of Subsection R315-266-103(b)", shall include:

(i) Name and address of the owner and operator of the facility as well as the location of the device burning hazardous waste;

(ii) Date that the certification of precompliance is submitted to the Director;

(iii) Brief description of the regulatory process required to comply with the interim status requirements of Section R315-266-103 including required emissions testing to demonstrate conformance with emissions standards for organic compounds, particulate matter, metals, and HCl and Cl_2;

(iv) Types and quantities of hazardous waste burned including, but not limited to, source, whether solids or liquids, as well as an appropriate description of the waste;

(v) Type of device(s) in which the hazardous waste is burned including a physical description and maximum production rate of each device;

(vi) Types and quantities of other fuels and industrial furnace feedstocks fed to each unit;

(vii) Brief description of the basis for this certification of precompliance as specified in Subsection R315-266-103(b)(2);

(viii) Locations where the record for the facility can be viewed and copied by interested parties. These records and locations shall at a minimum include:

(A) The administrative record kept by the Agency office where the supporting documentation was submitted or another location designated by the Director; and

(B) The BIF correspondence file kept at the facility site where the device is located. The correspondence file shall include all correspondence between the facility and the Director and local regulatory officials, including copies of all certifications and notifications, such as the precompliance certification, precompliance public notice, notice of compliance testing, compliance test report, compliance certification, time extension requests and approvals or denials, enforcement notifications of violations, and copies of EPA and State site visit reports submitted to the owner or operator.

(ix) Notification of the establishment of a facility mailing list whereby interested parties shall notify the Director that they wish to be placed on the mailing list to receive future information and notices about this facility; and

(x) Location, mailing address, of the Division of Waste Management and Radiation Control, where further information can be obtained on regulation of hazardous waste burning.

(7) Monitoring other operating parameters. When the monitoring systems for the operating parameters listed in Subsections R315-266-103(c)(1)(v) through (xiii) are installed and operating in conformance with vendor specifications or, for CO, HC, and oxygen, specifications provided by appendix IX of Rule R315-266, as appropriate, the parameters shall be continuously monitored and records shall be maintained in the operating record.

(8) Revised certification of precompliance. The owner or operator may revise at any time the information and operating conditions documented under Subsections R315-266-103(b)(2) and (b)(3) in the certification of precompliance by submitting a revised certification of precompliance under procedures provided by Subsections R315-266-103(b)(2) and (b)(3).

(i) The public notice requirements of Subsection R315-266-103(b)(6) do not apply to recertifications.

(ii) The owner and operator shall operate the facility within the limits established for the operating parameters under Subsection R315-266-103(b)(3) until a revised certification is submitted under Subsection R315-266-103(b)(8) or a certification of compliance is submitted under Subsection R315-266-103(c).

(9) Certification of precompliance statement. The owner or operator shall include the following signed statement with the certification of precompliance submitted to the Director:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of Subsection R315-266-103(b) are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also acknowledge that the operating limits established in this certification pursuant to Subsections R315-266-103(b)(3) and (4) are enforceable limits at which the facility can legally operate during interim status until: (1) A revised certification of precompliance is submitted, (2) a certification of compliance is submitted, or (3) an operating permit is issued."

(c) Certification of compliance. The owner or operator shall conduct emissions testing to document compliance with the emissions standards of Subsections R315-266-104(b) through (e) and 103(a)(5)(i)(D) and Sections R315-266-105, 106, 107, and, under the procedures prescribed by Subsection R315-266-103(c), except under extensions of time provided by Subsection R315-266-103(c)(7). Based on the compliance test, the owner or operator shall submit to the Director on or before August 21, 1992 a complete and accurate "certification of compliance," under Subsection R315-266-103(c)(4), with those emission standards establishing limits on the operating parameters specified in Subsection R315-266-103(c)(1).

(1) Limits on operating conditions. The owner or operator shall establish limits on the following parameters based on operations during the compliance test, under procedures prescribed in Subsection R315-266-103(c)(4)(iv), or as otherwise specified and include these limits with the certification of compliance. The boiler or industrial furnace shall be operated in accordance with these operating limits and the applicable emissions standards of Subsections R315-266-104(b) through (e) and 103(a)(5)(i)(D) and Sections R315-266-105, 106, and 107, at all times when there is hazardous waste in the unit.

(i) Feed rate of total hazardous waste and, unless complying with the Tier I or adjusted Tier I metals feed rate screening limits under Subsection R315-266-106(b) or (e), pumpable hazardous waste;

(ii) Feed rate of each metal in the following feedstreams:

(A) Total feedstreams, except that:

(I) Facilities that comply with Tier I or Adjusted Tier I metals feed rate screening limits may set their operating limits at the metals feed rate screening limits determined under Subsections R315-266-106(b) or (e); and

(II) Industrial furnaces that shall comply with the alternative metals implementation approach under Subsection R315-266-103(c)(3)(ii) shall specify limits on the concentration of each metal in the collected particulate matter in lieu of feed rate limits for total feedstreams;

(B) Total hazardous waste feed, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e); and

(C) Total pumpable hazardous waste feed, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsection R315-266-106(b) or (e);

(iii) Total feed rate of chlorine and chloride in total feed streams, except that facilities that comply with Tier I or Adjusted Tier I feed rate screening limits may set their operating limits at the total chlorine and chloride feed rate screening limits determined under Subsections R315-266-107(b)(1) or (e);

(iv) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited;

(v) Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas. When complying with the CO controls of Subsection R315-266-104(b), the CO limit is 100 ppmv, and when complying with the HC controls of Subsection R315-266-104(c), the HC limit is 20 ppmv. When complying with the CO controls of Subsection R315-266-104(c), the CO limit is established based on the compliance test;

(vi) Maximum production rate of the device in appropriate units when producing normal product, unless complying with the Tier I or Adjusted Tier I feed rate screening limits for chlorine under Subsections R315-266-107(b)(1) or (e) and for all metals under Subsections R315-266-106(b) or (e), and the uncontrolled particulate emissions do not exceed the standard under Section R315-266-105;

(vii) Maximum combustion chamber temperature where the temperature measurement is as close to the combustion zone as possible and is upstream of any quench water injection, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e);

(viii) Maximum flue gas temperature entering a particulate matter control device, unless complying with Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under Subsections R315-266-107(b) or (e);

(ix) For systems using wet scrubbers, including wet ionizing scrubbers, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under Subsections R315-266-107(b)(1) or (e):

(A) Minimum liquid to flue gas ratio;

(B) Minimum scrubber blowdown from the system or maximum suspended solids content of scrubber water; and

(C) Minimum pH level of the scrubber water;

(x) For systems using venturi scrubbers, the minimum differential gas pressure across the venture, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under Subsections R315-266-107(b)(1) or (e);

(xi) For systems using dry scrubbers, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under Subsections R315-266-107(b)(1) or (e):

(A) Minimum caustic feed rate; and

(B) Maximum flue gas flow rate;

(xii) For systems using wet ionizing scrubbers or electrostatic precipitators, unless complying with the Tier I or Adjusted Tier I metals feed rate screening limits under Subsections R315-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under Subsections R315-266-107(b)(1) or (e):

(A) Minimum electrical power in kilovolt amperes (kVA) to the precipitator plates; and

(B) Maximum flue gas flow rate;

(xiii) For systems using fabric filters (baghouses), the minimum pressure drop, unless complying with the Tier I or Adjusted Tier I metal feed rate screening limits under Subsections R315-266-106(b) or (e) and the total chlorine and chloride feed rate screening limits under Subsections R315-266-107(b)(1) or (e).

(2) Prior notice of compliance testing. At least 30 days prior to the compliance testing required by Subsection R315-266-103(c)(3), the owner or operator shall notify the Director and submit the following information:

(i) General facility information including:

(A) EPA facility ID number;

(B) Facility name, contact person, telephone number, and address;

(C) Person responsible for conducting compliance test, including company name, address, and telephone number, and a statement of qualifications;

(D) Planned date of the compliance test;

(ii) Specific information on each device to be tested including:

(A) Description of boiler or industrial furnace;

(B) A scaled plot plan showing the entire facility and location of the boiler or industrial furnace;
(C) A description of the air pollution control system;
(D) Identification of the continuous emission monitors that are installed, including:
(I) Carbon monoxide monitor;
(II) Oxygen monitor;
(III) Hydrocarbon monitor, specifying the minimum temperature of the system and, if the temperature is less than 150 °C, an explanation of why a heated system is not used, see Subsection R315-266-103(c)(5), and a brief description of the sample gas conditioning system;
(E) Indication of whether the stack is shared with another device that will be in operation during the compliance test;
(F) Other information useful to an understanding of the system design or operation.
(iii) Information on the testing planned, including a complete copy of the test protocol and Quality Assurance/Quality Control (QA/QC) plan, and a summary description for each test providing the following information at a minimum:
(A) Purpose of the test, e.g., demonstrate compliance with emissions of particulate matter; and
(B) Planned operating conditions, including levels for each pertinent parameter specified in Subsection R315-266-103(c)(1).
(3) Compliance testing
(i) General. Compliance testing shall be conducted under conditions for which the owner or operator has submitted a certification of precompliance under Subsection R315-266-103(b) and under conditions established in the notification of compliance testing required by Subsection R315-266-103(c)(2). The owner or operator may seek approval on a case-by-case basis to use compliance test data from one unit in lieu of testing a similar onsite unit. To support the request, the owner or operator shall provide a comparison of the hazardous waste burned and other feedstreams, and the design, operation, and maintenance of both the tested unit and the similar unit. The Director shall provide a written approval to use compliance test data in lieu of testing a similar unit if he finds that the hazardous wastes, the devices, and the operating conditions are sufficiently similar, and the data from the other compliance test is adequate to meet the requirements of Subsection R315-266-103(c).
(ii) Special requirements for industrial furnaces that recycle collected PM. Owners and operators of industrial furnaces that recycle back into the furnace particulate matter (PM) from the air pollution control system shall comply with one of the following procedures for testing to determine compliance with the metals standards of Subsections R315-266-106(c) or (d):

(A) The special testing requirements prescribed in "Alternative Method for Implementing Metals Controls" in appendix IX of Rule R315-266; or

(B) Stack emissions testing for a minimum of 6 hours each day while hazardous waste is burned during interim status. The testing shall be conducted when burning normal hazardous waste for that day at normal feed rates for that day and when the air pollution control system is operated under normal conditions. During interim status, hazardous waste analysis for metals content shall be sufficient for the owner or operator to determine if changes in metals content may affect the ability of the facility to meet the metals emissions standards established under Subsections R315-266-106(c) or (d). Under this option, operating limits, under Subsection R315-266-103(c)(1), shall be established during compliance testing under Subsection R315-266-103(c)(3) only on the following parameters;

(I) Feed rate of total hazardous waste;

(II) Total feed rate of chlorine and chloride in total feed streams;

(III) Total feed rate of ash in total feed streams, except that the ash feed rate for cement kilns and light-weight aggregate kilns is not limited;

(IV) Carbon monoxide concentration, and where required, hydrocarbon concentration in stack gas;

(V) Maximum production rate of the device in appropriate units when producing normal product; or

(C) Conduct compliance testing to determine compliance with the metals standards to establish limits on the operating parameters of Subsection R315-266-103(c)(1) only after the kiln system has been conditioned to enable it to reach equilibrium with respect to metals fed into the system and metals emissions. During conditioning, hazardous waste and raw materials having the same metals content as will be fed during the compliance test shall be fed at the feed rates that will be fed during the compliance test.

(iii) Conduct of compliance testing.

(A) If compliance with all applicable emissions standards of Sections R315-266-104 through 107 is not demonstrated simultaneously during a set of test runs, the operating conditions of additional test runs required to demonstrate compliance with remaining emissions standards shall be as close as possible to the original operating conditions.

(B) Prior to obtaining test data for purposes of demonstrating compliance with the applicable emissions standards of Sections R315-266-104 through 107 or establishing limits on operating parameters under Section R315-266-103, the facility shall operate under compliance test conditions for a sufficient period to reach steady-state operations. Industrial furnaces that recycle collected particulate matter back into the furnace and that comply with Subsections R315-266-103(c)(3)(ii)(A) or (B), however, need not reach steady state conditions with respect to the

flow of metals in the system prior to beginning compliance testing for metals.

(C) Compliance test data on the level of an operating parameter for which a limit shall be established in the certification of compliance shall be obtained during emissions sampling for the pollutant(s), i.e., metals, PM, HCl/Cl2, organic compounds, for which the parameter shall be established as specified by Subsection R315-266-103(c)(1).

(4) Certification of compliance. Within 90 days of completing compliance testing, the owner or operator shall certify to the Director compliance with the emissions standards of Subsections R315-266-104 (b), (c), and (e), and Sections R315-266-105, 106, and 107, and Subsection R315-266-103(a)(5)(i)(D). The certification of compliance shall include the following information:

(i) General facility and testing information including:

(A) EPA facility ID number;

(B) Facility name, contact person, telephone number, and address;

(C) Person responsible for conducting compliance testing, including company name, address, and telephone number, and a statement of qualifications;

(D) Date(s) of each compliance test;

(E) Description of boiler or industrial furnace tested;

(F) Person responsible for quality assurance/quality control (QA/QC), title, and telephone number, and statement that procedures prescribed in the QA/QC plan submitted under Subsection R315-266-103(c)(2)(iii) have been followed, or a description of any changes and an explanation of why changes were necessary.

(G) Description of any changes in the unit configuration prior to or during testing that would alter any of the information submitted in the prior notice of compliance testing under Subsection R315-266-103(c)(2), and an explanation of why the changes were necessary;

(H) Description of any changes in the planned test conditions prior to or during the testing that alter any of the information submitted in the prior notice of compliance testing under Subsection R315-266-103(c)(2), and an explanation of why the changes were necessary; and

(I) The complete report on results of emissions testing.

(ii) Specific information on each test including:

(A) Purpose(s) of test, e.g., demonstrate conformance with the emissions limits for particulate matter, metals, HCl, Cl_2, and CO;

(B) Summary of test results for each run and for each test including the following information:

(I) Date of run;

(II) Duration of run;

(III) Time-weighted average and highest hourly rolling average CO level for each run and for the test;

(IV) Highest hourly rolling average HC level, if HC monitoring is required for each run and for the test;

(V) If dioxin and furan testing is required under Subsection R315-266-104(e), time-weighted average emissions for each run and for the test of chlorinated dioxin and furan emissions, and the predicted maximum annual average ground level concentration of the toxicity equivalency factor;

(VI) Time-weighted average particulate matter emissions for each run and for the test;

(VII) Time-weighted average HCl and Cl2 emissions for each run and for the test;

(VIII) Time-weighted average emissions for the metals subject to regulation under Subsection R315-266-106 for each run and for the test; and

(IX) QA/QC results.

(iii) Comparison of the actual emissions during each test with the emissions limits prescribed by Subsections R315-266-104(b), (c), and (e), and Sections R315-266-105, through 107 and established for the facility in the certification of precompliance under Subsection R315-266-103(b).

(iv) Determination of operating limits based on all valid runs of the compliance test for each applicable parameter listed in Subsection R315-266-103(c)(1) using either of the following procedures:

(A) Instantaneous limits. A parameter may be measured and recorded on an instantaneous basis, i.e., the value that occurs at any time, and the operating limit specified as the time-weighted average during all runs of the compliance test; or

(B) Hourly rolling average basis. The limit for a parameter may be established and continuously monitored on an hourly rolling average basis defined as follows:

(I) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds; and

(II) An hourly rolling average is the arithmetic mean of the 60 most recent 1-minute average values recorded by the continuous monitoring system.

(III) The operating limit for the parameter shall be established based on compliance test data as the average over all test runs of the highest hourly rolling average value for each run.

(C) Rolling average limits for carcinogenic metals and lead. Feed rate limits for the carcinogenic metals, i.e., arsenic, beryllium, cadmium and chromium, and lead may be established either on an hourly rolling average basis as prescribed by Subsection R315-266-103(c)(4)(iv)(B) or on,up to, a 24 hour rolling average basis. If the owner or operator elects to use an averaging period from 2 to 24 hours:

(I) The feed rate of each metal shall be limited at any time to ten times the feed rate that would be allowed on an hourly rolling average basis;

(II) The continuous monitor shall meet the following specifications:

(i) A continuous monitor is one which continuously samples the regulated parameter without interruption, and evaluates the detector response at least once each 15 seconds, and computes and records the average value at least every 60 seconds.

(ii) The rolling average for the selected averaging period is defined as arithmetic mean of one hour block averages for the averaging period. A one hour block average is the arithmetic mean of the one minute averages recorded during the 60-minute period beginning at one minute after the beginning of preceding clock hour; and

(III) The operating limit for the feed rate of each metal shall be established based on compliance test data as the average over all test runs of the highest hourly rolling average feed rate for each run.

(D) Feed rate limits for metals, total chloride and chlorine, and ash. Feed rate limits for metals, total chlorine and chloride, and ash are established and monitored by knowing the concentration of the substance, i.e., metals, chloride/chlorine, and ash, in each feedstream and the flow rate of the feedstream. To monitor the feed rate of these substances, the flow rate of each feedstream shall be monitored under the continuous monitoring requirements of Subsections R315-266-103(c)(4)(iv)(A) through (C).

(v) Certification of compliance statement. The following statement shall accompany the certification of compliance:

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information and supporting documentation. Copies of all emissions tests, dispersion modeling results and other information used to determine conformance with the requirements of Subsection R315-266-103(c) are available at the facility and can be obtained from the facility contact person listed above. Based on my inquiry of the person or persons who manages the facility, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also acknowledge that the operating conditions established in this certification pursuant to Subsection R315-266-103(c)(4)(iv) are enforceable limits at which the facility

can legally operate during interim status until a revised certification of compliance is submitted."

(5) Special requirements for HC monitoring systems. When an owner or operator is required to comply with the hydrocarbon (HC) controls provided by Subsections R315-266-104(c) or 103(a)(5)(i)(D), a conditioned gas monitoring system may be used in conformance with specifications provided in appendix IX of Rule R315-266 provided that the owner or operator submits a certification of compliance without using extensions of time provided by Subsection R315-266-103(c)(7).

(6) Special operating requirements for industrial furnaces that recycle collected PM. Owners and operators of industrial furnaces that recycle back into the furnace particulate matter (PM) from the air pollution control system shall:

(i) When complying with the requirements of Subsection R315-266-103(c)(3)(ii)(A), comply with the operating requirements prescribed in "Alternative Method to Implement the Metals Controls" in appendix IX of Rule R315-266; and

(ii) When complying with the requirements of Subsection R315-266-103(c)(3)(ii)(B), comply with the operating requirements prescribed by Subsection R315-266-103(c).

(7) Extensions of time.

(i) If the owner or operator does not submit a complete certification of compliance for all of the applicable emissions standards of Sections R315-266-104, through 107 by August 21, 1992, he/she shall either:

(A) Stop burning hazardous waste and begin closure activities under Subsection R315-266-103(l) for the hazardous waste portion of the facility; or

(B) Limit hazardous waste burning only for purposes of compliance testing, and pretesting to prepare for compliance testing, a total period of 720 hours for the period of time beginning August 21, 1992, submit a notification to the Director by August 21, 1992 stating that the facility is operating under restricted interim status and intends to resume burning hazardous waste, and submit a complete certification of compliance by August 23, 1993; or

(C) Obtain a case-by-case extension of time under Subsection R315-266-103(c)(7)(ii).

(ii) The owner or operator may request a case-by-case extension of time to extend any time limit provided by Subsection R315-266-103(c) if compliance with the time limit is not practicable for reasons beyond the control of the owner or operator.

(A) In granting an extension, the Director may apply conditions as the facts warrant to ensure timely compliance with the requirements of Section R315-266-103 and that the facility operates in a manner that does not pose a hazard to human health and the environment;

(B) When an owner or operator requests an extension of time to enable the facility to comply with the alternative

hydrocarbon provisions of Subsection R315-266-104(f) and obtain a RCRA operating permit because the facility cannot meet the HC limit of Subsection R315-266-104(c):

(1) The Director shall, in considering whether to grant the extension:

(i) Determine whether the owner and operator have submitted in a timely manner a complete part B permit application that includes information required under Subsection R315-270-22(b); and

(ii) Consider whether the owner and operator have made a good faith effort to certify compliance with all other emission controls, including the controls on dioxins and furans of Subsection R315-266-104(e) and the controls on PM, metals, and HCl/Cl_2.

(2) If an extension is granted, the Director shall, as a condition of the extension, require the facility to operate under flue gas concentration limits on CO and HC that, based on available information, including information in the part B permit application, are baseline CO and HC levels as defined by Subsection R315-266-104(f)(1).

(8) Revised certification of compliance. The owner or operator may submit at any time a revised certification of compliance, recertification of compliance, under the following procedures:

(i) Prior to submittal of a revised certification of compliance, hazardous waste may not be burned for more than a total of 720 hours under operating conditions that exceed those established under a current certification of compliance, and such burning may be conducted only for purposes of determining whether the facility can operate under revised conditions and continue to meet the applicable emissions standards of Sections R315-266-104 through 107;

(ii) At least 30 days prior to first burning hazardous waste under operating conditions that exceed those established under a current certification of compliance, the owner or operator shall notify the Director and submit the following information:

(A) EPA facility ID number, and facility name, contact person, telephone number, and address;

(B) Operating conditions that the owner or operator is seeking to revise and description of the changes in facility design or operation that prompted the need to seek to revise the operating conditions;

(C) A determination that when operating under the revised operating conditions, the applicable emissions standards of Sections R315-266-104 through 107 are not likely to be exceeded. To document this determination, the owner or operator shall submit the applicable information required under Subsection R315-266-103(b)(2); and

(D) Complete emissions testing protocol for any pretesting and for a new compliance test to determine compliance with the applicable emissions standards of Sections R315-266-104 through 107 when operating under revised operating conditions. The protocol shall include a

schedule of pre-testing and compliance testing. If the owner and operator revises the scheduled date for the compliance test, he/she shall notify the Director in writing at least 30 days prior to the revised date of the compliance test;

(iii) Conduct a compliance test under the revised operating conditions and the protocol submitted to the Director to determine compliance with the applicable emissions standards of Sections R315-266-104 through 107; and

(iv) Submit a revised certification of compliance under Subsection R315-266-103(c)(4).

(d) Periodic Recertifications. The owner or operator shall conduct compliance testing and submit to the Director a recertification of compliance under provisions of Subsection R315-266-103(c) within five years from submitting the previous certification or recertification. If the owner or operator seeks to recertify compliance under new operating conditions, he/she shall comply with the requirements of Subsection R315-266-103(c)(8).

(e) Noncompliance with certification schedule. If the owner or operator does not comply with the interim status compliance schedule provided by Subsections R315-266-103(b), (c), and (d), hazardous waste burning shall terminate on the date that the deadline is missed, closure activities shall begin under Subsection R315-266-103(l), and hazardous waste burning may not resume except under an operating permit issued under Section R315-270-66. For purposes of compliance with the closure provisions of Subsection R315-266-103(l) and 40 CFR 265.112(d)(2) and 113, which are adopted by reference, the boiler or industrial furnace has received "the known final volume of hazardous waste" on the date that the deadline is missed.

(f) Start-up and shut-down. Hazardous waste, except waste fed solely as an ingredient under the Tier I, or adjusted Tier I, feed rate screening limits for metals and chloride/chlorine, shall not be fed into the device during start-up and shut-down of the boiler or industrial furnace, unless the device is operating within the conditions of operation specified in the certification of compliance.

(g) Automatic waste feed cutoff. During the compliance test required by Subsection R315-266-103(c)(3), and upon certification of compliance under Subsection R315-266-103(c), a boiler or industrial furnace shall be operated with a functioning system that automatically cuts off the hazardous waste feed when the applicable operating conditions specified in Subsections R315-266-103(c)(1)(i) and (v) through (xiii) deviate from those established in the certification of compliance. In addition:

(1) To minimize emissions of organic compounds, the minimum combustion chamber temperature, or the indicator of combustion chamber temperature, that occurred during the compliance test shall be maintained while hazardous waste or hazardous waste residues remain in the combustion chamber,

with the minimum temperature during the compliance test defined as either:

(i) If compliance with the combustion chamber temperature limit is based on an hourly rolling average, the minimum temperature during the compliance test is considered to be the average over all runs of the lowest hourly rolling average for each run; or

(ii) If compliance with the combustion chamber temperature limit is based on an instantaneous temperature measurement, the minimum temperature during the compliance test is considered to be the time-weighted average temperature during all runs of the test; and

(2) Operating parameters limited by the certification of compliance shall continue to be monitored during the cutoff, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the limits established in the certification of compliance.

(h) Fugitive emissions. Fugitive emissions shall be controlled by:

(1) Keeping the combustion zone totally sealed against fugitive emissions; or

(2) Maintaining the combustion zone pressure lower than atmospheric pressure; or

(3) An alternate means of control that the owner or operator can demonstrate provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure. Support for such demonstration shall be included in the operating record.

(i) Changes. A boiler or industrial furnace shall cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or industrial furnace feedstocks, or changes in the boiler or industrial furnace design or operating conditions deviate from the limits specified in the certification of compliance.

(j) Monitoring and Inspections.

(1) The owner or operator shall monitor and record the following, at a minimum, while burning hazardous waste:

(i) Feed rates and composition of hazardous waste, other fuels, and industrial furnace feed stocks, and feed rates of ash, metals, and total chloride and chlorine as necessary to ensure conformance with the certification of precompliance or certification of compliance;

(ii) Carbon monoxide (CO), oxygen, and if applicable, hydrocarbons (HC), on a continuous basis at a common point in the boiler or industrial furnace downstream of the combustion zone and prior to release of stack gases to the atmosphere in accordance with the operating limits specified in the certification of compliance. CO, HC, and oxygen monitors shall be installed, operated, and maintained in accordance with methods specified in appendix IX of Rule R315-266.

(iii) Upon the request of the Director, sampling and analysis of the hazardous waste, and other fuels and

industrial furnace feed stocks as appropriate, and the stack gas emissions shall be conducted to verify that the operating conditions established in the certification of precompliance or certification of compliance achieve the applicable standards of Sections R315-266-104 through 107.

(2) The boiler or industrial furnace and associated equipment, pumps, valves, pipes, fuel storage tanks, etc., shall be subjected to thorough visual inspection when they contain hazardous waste, at least daily for leaks, spills, fugitive emissions, and signs of tampering.

(3) The automatic hazardous waste feed cutoff system and associated alarms shall be tested at least once every 7 days when hazardous waste is burned to verify operability, unless the owner or operator can demonstrate that weekly inspections will unduly restrict or upset operations and that less frequent inspections will be adequate. Support for such demonstration shall be included in the operating record. At a minimum, operational testing shall be conducted at least once every 30 days.

(4) These monitoring and inspection data shall be recorded and the records shall be placed in the operating log.

(k) Recordkeeping. The owner or operator shall keep in the operating record of the facility all information and data required by Section R315-266-103 for five years.

(l) Closure. At closure, the owner or operator shall remove all hazardous waste and hazardous waste residues, including, but not limited to, ash, scrubber waters, and scrubber sludges, from the boiler or industrial furnace and shall comply with 40 CFR 265.111 through 115, which are adopted by reference.

R315-266-104. Hazardous Waste Burned in Boilers and Industrial Furnaces - Standards to control organic emissions.

(a) DRE standard

(1) General. Except as provided in Subsection R315-266-104(a)(3), a boiler or industrial furnace burning hazardous waste shall achieve a destruction and removal efficiency (DRE) of 99.99% for all organic hazardous constituents in the waste feed. To demonstrate conformance with this requirement, 99.99% DRE shall be demonstrated during a trial burn for each principal organic hazardous constituent (POHC) designated, under Subsection R315-266-104(a)(2), in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$DRE=(1-W_{out}/W_{in})X100$$

where:

W_{in}= Mass feed rate of one principal organic hazardous constituent (POHC) in the hazardous waste fired to the boiler or industrial furnace; and

W_{out} = Mass emission rate of the same POHC present in stack gas prior to release to the atmosphere.

(2) Designation of POHCs. Principal organic hazardous constituents (POHCs) are those compounds for which compliance with the DRE requirements of Section R315-266-104 shall be demonstrated in a trial burn in conformance with procedures prescribed in Section R315-270-66. One or more POHCs shall be designated by the Director for each waste feed to be burned. POHCs shall be designated based on the degree of difficulty of destruction of the organic constituents in the waste and on their concentrations or mass in the waste feed considering the results of waste analyses submitted with part B of the permit application. POHCs are most likely to be selected from among those compounds listed in Rule R315-261, appendix VIII that are also present in the normal waste feed. However, if the applicant demonstrates to the Director's satisfaction that a compound not listed in Rule R315-261, appendix VIII or not present in the normal waste feed is a suitable indicator of compliance with the DRE requirements of Section R315-266-104, that compound may be designated as a POHC. Such POHCs need not be toxic or organic compounds.

(3) Dioxin-listed waste. A boiler or industrial furnace burning hazardous waste containing, or derived from, EPA Hazardous Wastes Nos. F020, F021, F022, F023, F026, or F027 shall achieve a destruction and removal efficiency (DRE) of 99.9999% for each POHC designated, under Subsection R315-266-104(a)(2), in its permit. This performance shall be demonstrated on POHCs that are more difficult to burn than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in Subsection R315-266-104(a)(1). In addition, the owner or operator of the boiler or industrial furnace shall notify the Director of intent to burn EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027.

(4) Automatic waiver of DRE trial burn. Owners and operators of boilers operated under the special operating requirements provided by Section R315-266-110 are considered to be in compliance with the DRE standard of Subsection R315-266-104(a)(1) and are exempt from the DRE trial burn.

(5) Low risk waste. Owners and operators of boilers or industrial furnaces that burn hazardous waste in compliance with the requirements of Subsection R315-266-109(a) are considered to be in compliance with the DRE standard of Subsection R315-266-104(a)(1) and are exempt from the DRE trial burn.

(b) Carbon monoxide standard.

(1) Except as provided in Subsection R315-266-104(c), the stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste cannot exceed 100 ppmv on an hourly rolling average basis, i.e., over any 60 minute period, continuously corrected to 7 percent oxygen, dry gas basis.

(2) CO and oxygen shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix IX of Rule R315-266.

(3) Compliance with the 100 ppmv CO limit shall be demonstrated during the trial burn, for new facilities or an interim status facility applying for a permit, or the compliance test, for interim status facilities. To demonstrate compliance, the highest hourly rolling average CO level during any valid run of the trial burn or compliance test shall not exceed 100 ppmv.

(c) Alternative carbon monoxide standard.

(1) The stack gas concentration of carbon monoxide (CO) from a boiler or industrial furnace burning hazardous waste may exceed the 100 ppmv limit provided that stack gas concentrations of hydrocarbons (HC) do not exceed 20 ppmv, except as provided by Subsection R315-266-104(f) for certain industrial furnaces.

(2) HC limits shall be established under Section R315-266-104 on an hourly rolling average basis, i.e., over any 60 minute period, reported as propane, and continuously corrected to 7 percent oxygen, dry gas basis.

(3) HC shall be continuously monitored in conformance with "Performance Specifications for Continuous Emission Monitoring of Hydrocarbons for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in appendix IX of Rule R315-266. CO and oxygen shall be continuously monitored in conformance with Subsection R315-266-104(b)(2).

(4) The alternative CO standard is established based on CO data during the trial burn, for a new facility, and the compliance test, for an interim status facility. The alternative CO standard is the average over all valid runs of the highest hourly average CO level for each run. The CO limit is implemented on an hourly rolling average basis, and continuously corrected to 7 percent oxygen, dry gas basis.

(d) Special requirements for furnaces. Owners and operators of industrial furnaces, e.g., kilns or cupolas, that feed hazardous waste for a purpose other than solely as an ingredient, see Section R315-266-103(a)(5)(ii), at any location other than the end where products are normally discharged and where fuels are normally fired shall comply with the hydrocarbon limits provided by Subsections R315-266-104(c) or (f) irrespective of whether stack gas CO concentrations meet the 100 ppmv limit of Subsection R315-266-104(b).

(e) Controls for dioxins and furans. Owners and operators of boilers and industrial furnaces that are equipped with a dry particulate matter control device that operates within the temperature range of 450-750 °F, and industrial furnaces operating under an alternative hydrocarbon limit established under Subsection R315-266-104(f) shall conduct a site-specific risk assessment as follows to demonstrate that emissions of chlorinated

dibenzo-p-dioxins and dibenzofurans do not result in an increased lifetime cancer risk to the hypothetical maximum exposed individual (MEI) exceeding 1 in 100,000:

(1) During the trial burn, for new facilities or an interim status facility applying for a permit, or compliance test, for interim status facilities, determine emission rates of the tetra-octa congeners of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs/CDFs) using Method 0023A, Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources, EPA Publication SW-846, as incorporated by reference in Section R315-260-11.

(2) Estimate the 2,3,7,8-TCDD toxicity equivalence of the tetra-octa CDDs/CDFs congeners using "Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran Congeners" in appendix IX of Rule R315-266. Multiply the emission rates of CDD/CDF congeners with a toxicity equivalence greater than zero, see the procedure, by the calculated toxicity equivalence factor to estimate the equivalent emission rate of 2,3,7,8-TCDD;

(3) Conduct dispersion modeling using methods recommended in appendix W of 40 CFR 51 ("Guideline on Air Quality Models (Revised)" (1986) and its supplements), the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in appendix IX of Rule R315-266, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised, incorporated by reference in R315-260-11, to predict the maximum annual average off-site ground level concentration of 2,3,7,8-TCDD equivalents determined under Subsection R315-266-104(e)(2). The maximum annual average concentration shall be used when a person resides on-site; and

(4) The ratio of the predicted maximum annual average ground level concentration of 2,3,7,8-TCDD equivalents to the risk-specific dose for 2,3,7,8-TCDD provided in appendix V of Rule R315-266, 2.2×10-7, shall not exceed 1.0.

(f) Monitoring CO and HC in the by-pass duct of a cement kiln. Cement kilns may comply with the carbon monoxide and hydrocarbon limits provided by Subsections R315-266-104(b), (c), and (d) by monitoring in the by-pass duct provided that:

(1) Hazardous waste is fired only into the kiln and not at any location downstream from the kiln exit relative to the direction of gas flow; and

(2) The by-pass duct diverts a minimum of 10% of kiln off-gas into the duct.

(g) Use of emissions test data to demonstrate compliance and establish operating limits. Compliance with the requirements of Section R315-266-104 shall be demonstrated simultaneously by emissions testing or during separate runs under identical operating conditions. Further, data to demonstrate compliance with the CO and HC limits of Section R315-266-104 or to establish alternative CO or HC

limits under Section R315-266-104 shall be obtained during the time that DRE testing, and where applicable, CDD/CDF testing under Subsection R315-266-104(e) and comprehensive organic emissions testing under Subsection R315-266-104(f) is conducted.

(h) Enforcement. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit, under Section R315-266-102, shall be regarded as compliance with Section R315-266-104. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of Section R315-266-104 may be "information" justifying modification or revocation and re-issuance of a permit under Section R315-270-41.

R315-266-105. Hazardous Waste Burned in Boilers and Industrial Furnaces - Standards to control particulate matter.

(a) A boiler or industrial furnace burning hazardous waste may not emit particulate matter in excess of 180 milligrams per dry standard cubic meter, 0.08 grains per dry standard cubic foot, after correction to a stack gas concentration of 7% oxygen, using procedures prescribed in 40 CFR part 60, appendix A, methods 1 through 5, and appendix IX of Rule R315-266.

(b) An owner or operator meeting the requirements of Subsection Rule R315-266-109(b) for the low risk waste exemption is exempt from the particulate matter standard.

(c) Oxygen correction.

(1) Measured pollutant levels shall be corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = P_m \times 14/(E-Y)$$

Where:

P_c is the corrected concentration of the pollutant in the stack gas, P_m is the measured concentration of the pollutant in the stack gas, E is the oxygen concentration on a dry basis in the combustion air fed to the device, and Y is the measured oxygen concentration on a dry basis in the stack.

(2) For devices that feed normal combustion air, E will equal 21 percent. For devices that feed oxygen-enriched air for combustion, that is, air with an oxygen concentration exceeding 21 percent, the value of E will be the concentration of oxygen in the enriched air.

(3) Compliance with all emission standards provided by Sections R315-266-100 through 112 shall be based on correcting to 7 percent oxygen using this procedure.

(d) For the purposes of permit enforcement, compliance with the operating requirements specified in the permit, under Section R315-266-102, shall be regarded as compliance with Section R315-266-105. However, evidence that compliance

with those permit conditions is insufficient to ensure compliance with the requirements of Section R315-266-105 may be "information" justifying modification or revocation and re-issuance of a permit under Section R315-270-41.

R315-266-106. Hazardous Waste Burned in Boilers and Industrial Furnaces - Standards to control metals emissions.

(a) General. The owner or operator shall comply with the metals standards provided by Subsections R315-266-106(b), (c), (d), (e), or (f) for each metal listed in Subsection R315-266-106(b) that is present in the hazardous waste at detectable levels by using appropriate analytical procedures.

(b) Tier I feed rate screening limits. Feed rate screening limits for metals are specified in appendix I of Rule R315-266 as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided in Subsection R315-266-106(b)(7).

(1) Noncarcinogenic metals. The feed rates of antimony, barium, lead, mercury, thallium, and silver in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed the screening limits specified in appendix I of Rule R315-266.

(i) The feed rate screening limits for antimony, barium, mercury, thallium, and silver are based on either:

(A) An hourly rolling average as defined in Subsection R315-266-102(e)(6)(i)(B); or

(B) An instantaneous limit not to be exceeded at any time.

(ii) The feed rate screening limit for lead is based on one of the following:

(A) An hourly rolling average as defined in Subsection R315-266-102(e)(6)(i)(B);

(B) An averaging period of 2 to 24 hours as defined in Subsection R315-266-102(e)(6)(ii) with an instantaneous feed rate limit not to exceed 10 times the feed rate that would be allowed on an hourly rolling average basis; or

(C) An instantaneous limit not to be exceeded at any time.

(2) Carcinogenic metals.

(i) The feed rates of arsenic, cadmium, beryllium, and chromium in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed values derived from the screening limits specified in appendix I of Rule R315-266. The feed rate of each of these metals is limited to a level such that the sum of the ratios of the actual feed rate to the feed rate screening limit specified in appendix I shall not exceed 1.0, as provided by the following equation:

The summation of $AFR_{(i)}/FRSL_{(i)}$ for i=1 to n is less than or equal to 1.0

where:

n=number of carcinogenic metals
AFR=actual feed rate to the device for metal “i”
FRSL=feed rate screening limit provided by appendix I of Rule R315-266 for metal “i”.

(ii) The feed rate screening limits for the carcinogenic metals are based on either:

(A) An hourly rolling average; or

(B) An averaging period of 2 to 24 hours as defined in Subsection R315-266-102(e)(6)(ii) with an instantaneous feed rate limit not to exceed 10 times the feed rate that would be allowed on an hourly rolling average basis.

(3) TESH.

(i) The terrain-adjusted effective stack height is determined according to the following equation:

TESH=Ha+H1-Tr

where:
Ha=Actual physical stack height
H1=Plume rise as determined from appendix VI of Rule R315-266 as a function of stack flow rate and stack gas exhaust temperature.
Tr=Terrain rise within five kilometers of the stack.

(ii) The stack height (Ha) may not exceed good engineering practice as specified in 40 CFR 51.100(ii).

(iii) If the TESH for a particular facility is not listed in the table in the appendices, the nearest lower TESH listed in the table shall be used. If the TESH is four meters or less, a value of four meters shall be used.

(4) Terrain type. The screening limits are a function of whether the facility is located in noncomplex or complex terrain. A device located where any part of the surrounding terrain within 5 kilometers of the stack equals or exceeds the elevation of the physical stack height (Ha) is considered to be in complex terrain and the screening limits for complex terrain apply. Terrain measurements are to be made from U.S. Geological Survey 7.5-minute topographic maps of the area surrounding the facility.

(5) Land use. The screening limits are a function of whether the facility is located in an area where the land use is urban or rural. To determine whether land use in the vicinity of the facility is urban or rural, procedures provided in appendices IX or X of Rule R315-266 shall be used.

(6) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls of metals emissions under a RCRA operating permit or interim status controls shall comply with the screening limits for all such units assuming all

hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics. The worst-case stack is determined from the following equation as applied to each stack:

K=HVT

Where:
K=a parameter accounting for relative influence of stack height and plume rise;
H=physical stack height (meters);
V=stack gas flow rate (m3/second); and
T=exhaust temperature (°K).
The stack with the lowest value of K is the worst-case stack.

(7) Criteria for facilities not eligible for screening limits. If any criteria below are met, the Tier I and Tier II screening limits do not apply. Owners and operators of such facilities shall comply with either the Tier III standards provided by Subsection R315-266-106(d) or with the adjusted Tier I feed rate screening limits provided by Subsection R315-266-106(e).

(i) The device is located in a narrow valley less than one kilometer wide;

(ii) The device has a stack taller than 20 meters and is located such that the terrain rises to the physical height within one kilometer of the facility;

(iii) The device has a stack taller than 20 meters and is located within five kilometers of a shoreline of a large body of water such as an ocean or large lake;

(iv) The physical stack height of any stack is less than 2.5 times the height of any building within five building heights or five projected building widths of the stack and the distance from the stack to the closest boundary is within five building heights or five projected building widths of the associated building; or

(v) The Director determines that standards based on site-specific dispersion modeling are required.

(8) Implementation. The feed rate of metals in each feedstream shall be monitored to ensure that the feed rate screening limits are not exceeded.

(c) Tier II emission rate screening limits. Emission rate screening limits are specified in appendix I as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. Criteria for facilities that are not eligible to comply with the screening limits are provided in Subsection R315-266-106(b)(7).

(1) Noncarcinogenic metals. The emission rates of antimony, barium, lead, mercury, thallium, and silver shall not exceed the screening limits specified in appendix I of Rule R315-266.

(2) Carcinogenic metals. The emission rates of arsenic, cadmium, beryllium, and chromium shall not exceed

values derived from the screening limits specified in appendix I of Rule R315-266. The emission rate of each of these metals is limited to a level such that the sum of the ratios of the actual emission rate to the emission rate screening limit specified in appendix I shall not exceed 1.0, as provided by the following equation:

The summation of $AER_{(i)}/ERSL_{(i)}$ for i=1 to n is less than or equal to 1.0

where:
n=number of carcinogenic metals
AER=actual emission rate for metal "i"
ERSL=emission rate screening limit provided by appendix I of Rule R315-266 for metal "i".

(3) Implementation. The emission rate limits shall be implemented by limiting feed rates of the individual metals to levels during the trial burn, for new facilities or an interim status facility applying for a permit, or the compliance test, for interim status facilities. The feed rate averaging periods are the same as provided by Subsections R315-266-106(b)(1)(i) and (ii) and (b)(2)(ii). The feed rate of metals in each feedstream shall be monitored to ensure that the feed rate limits for the feedstreams specified under Sections R315-266-102 or 103 are not exceeded.

(4) Definitions and limitations. The definitions and limitations provided by Subsection R315-266-106(b) for the following terms also apply to the Tier II emission rate screening limits provided by Subsection R315-266-106(c): terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

(5) Multiple stacks.

(i) Owners and operators of facilities with more than one onsite stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under a RCRA operating permit or interim status controls shall comply with the emissions screening limits for any such stacks assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

(ii) The worst-case stack is determined by procedures provided in Subsection R315-266-106(b)(6).

(iii) For each metal, the total emissions of the metal from those stacks shall not exceed the screening limit for the worst-case stack.

(d) Tier III and Adjusted Tier I site-specific risk assessment. The requirements of Subsection R315-266-106(d) apply to facilities complying with either the Tier III or Adjusted Tier I controls, except where specified otherwise.

(1) General. Conformance with the Tier III metals controls shall be demonstrated by emissions testing to determine the emission rate for each metal. In addition,

conformance with either the Tier III or Adjusted Tier I metals controls shall be demonstrated by air dispersion modeling to predict the maximum annual average off-site ground level concentration for each metal, and a demonstration that acceptable ambient levels are not exceeded.

(2) Acceptable ambient levels. Appendices IV and V of Rule R315-266 list the acceptable ambient levels for purposes of Rule R315-266. Reference air concentrations (RACs) are listed for the noncarcinogenic metals and 10-5 risk-specific doses (RSDs) are listed for the carcinogenic metals. The RSD for a metal is the acceptable ambient level for that metal provided that only one of the four carcinogenic metals is emitted. If more than one carcinogenic metal is emitted, the acceptable ambient level for the carcinogenic metals is a fraction of the RSD as described in Subsection R315-266-106(d)(3).

(3) Carcinogenic metals. For the carcinogenic metals, arsenic, cadmium, beryllium, and chromium, the sum of the ratios of the predicted maximum annual average off-site ground level concentrations, except that on-site concentrations shall be considered if a person resides on site, to the risk-specific dose (RSD) for all carcinogenic metals emitted shall not exceed 1.0 as determined by the following equation:

The summation of Predicted Ambient Concentration$_{(i)}$/Risk-Specific Dose$_{(i)}$ for i=1 to n is less than or equal to 1.0

where: n=number of carcinogenic metals

(4) Noncarcinogenic metals. For the noncarcinogenic metals, the predicted maximum annual average off-site ground level concentration for each metal shall not exceed the reference air concentration (RAC).

(5) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on metals emissions under a RCRA operating permit or interim status controls shall conduct emissions testing, except that facilities complying with Adjusted Tier I controls need not conduct emissions testing, and dispersion modeling to demonstrate that the aggregate emissions from all such on-site stacks do not result in an exceedance of the acceptable ambient levels.

(6) Implementation. Under Tier III, the metals controls shall be implemented by limiting feed rates of the individual metals to levels during the trial burn, for new facilities or an interim status facility applying for a permit, or the compliance test, for interim status facilities. The feed rate averaging periods are the same as provided by Subsections R315-266-106(b)(1)(i) and (ii) and (b)(2)(ii). The feed rate of metals in each feedstream shall be monitored to ensure that the feed rate limits for the

feedstreams specified under Sections R315-266-102 or 103 are not exceeded.

(e) Adjusted Tier I feed rate screening limits. The owner or operator may adjust the feed rate screening limits provided by appendix I of Rule R315-266 to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit for a metal is determined by back-calculating from the acceptable ambient level provided by appendices IV and V of Rule R315-266 using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted Tier I feed rate screening limit. The feed rate screening limits for carcinogenic metals are implemented as prescribed in Subsection R315-266-106(b)(2).

(f) Alternative implementation approaches.

(1) The Director may approve on a case-by-case basis approaches to implement the Tier II or Tier III metals emission limits provided by Subsections R315-266-106(c) or (d) alternative to monitoring the feed rate of metals in each feedstream.

(2) The emission limits provided by Subsection R315-266-106(d) shall be determined as follows:

(i) For each noncarcinogenic metal, by back-calculating from the RAC provided in appendix IV of Rule R315-266 to determine the allowable emission rate for each metal using the dilution factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with Subsection R315-266-106(h); and

(ii) For each carcinogenic metal by:

(A) Back-calculating from the RSD provided in appendix V of Rule R315-266 to determine the allowable emission rate for each metal if that metal were the only carcinogenic metal emitted using the dilution factor for the maximum annual average ground level concentration predicted by dispersion modeling in conformance with Subsection R315-266-106(h); and

(B) If more than one carcinogenic metal is emitted, selecting an emission limit for each carcinogenic metal not to exceed the emission rate determined by Subsection R315-266-106(f)(2)(ii)(A) such that the sum for all carcinogenic metals of the ratios of the selected emission limit to the emission rate determined by Subsection R315-266-106(f)(2)(ii)(A) does not exceed 1.0.

(g) Emission testing

(1) General. Emission testing for metals shall be conducted using Method 0060, Determinations of Metals in Stack Emissions, EPA Publication SW-846, as incorporated by reference in Section R315-260-11.

(2) Hexavalent chromium. Emissions of chromium are assumed to be hexavalent chromium unless the owner or operator conducts emissions testing to determine hexavalent chromium emissions using procedures prescribed in Method 0061, Determination of Hexavalent Chromium Emissions from

Stationary Sources, EPA Publication SW-846, as incorporated by reference in Section R315-260-11.

(h) Dispersion Modeling. Dispersion modeling required under Section R315-266-106 shall be conducted according to methods recommended in appendix W of 40 CFR 51, "Guideline on Air Quality Models (Revised)" (1986) and its supplements, the "Hazardous Waste Combustion Air Quality Screening Procedure", provided in appendix IX of Rule R315-266, or in Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised, incorporated by reference in Section R315-260-11, to predict the maximum annual average off-site ground level concentration. However, on-site concentrations shall be considered when a person resides on-site.

(i) Enforcement. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit, under Section R315-266-102, shall be regarded as compliance with Section R315-266-106. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of Section R315-266-106 may be "information" justifying modification or revocation and re-issuance of a permit under Section R315-270-41.

R315-266-107. Hazardous Waste Burned in Boilers and Industrial Furnaces - Standards to control hydrogen chloride (HCl) and chlorine gas (Cl_2) emissions.

(a) General. The owner or operator shall comply with the hydrogen chloride (HCl) and chlorine (Cl_2) controls provided by Subsection R315-266-107(b), (c), or (e).

(b) Screening limits

(1) Tier I feed rate screening limits. Feed rate screening limits are specified for total chlorine in appendix II of Rule R315-266 as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The feed rate of total chlorine and chloride, both organic and inorganic, in all feed streams, including hazardous waste, fuels, and industrial furnace feed stocks shall not exceed the levels specified.

(2) Tier II emission rate screening limits. Emission rate screening limits for HCl and Cl_2 are specified in appendix III of Rule R315-266 as a function of terrain-adjusted effective stack height and terrain and land use in the vicinity of the facility. The stack emission rates of HCl and Cl_2 shall not exceed the levels specified.

(3) Definitions and limitations. The definitions and limitations provided by Subsection R315-266-106(b) for the following terms also apply to the screening limits provided by Subsection R315-266-107(b): terrain-adjusted effective stack height, good engineering practice stack height, terrain type, land use, and criteria for facilities not eligible to use the screening limits.

(4) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on HCl or Cl_2 emissions under a RCRA operating permit or interim status controls shall comply with the Tier I and Tier II screening limits for those stacks assuming all hazardous waste is fed into the device with the worst-case stack based on dispersion characteristics.

(i) The worst-case stack is determined by procedures provided in Subsection R315-266-106(b)(6).

(ii) Under Tier I, the total feed rate of chlorine and chloride to all subject devices shall not exceed the screening limit for the worst-case stack.

(iii) Under Tier II, the total emissions of HCl and Cl_2 from all subject stacks shall not exceed the screening limit for the worst-case stack.

(c) Tier III site-specific risk assessments

(1) General. Conformance with the Tier III controls shall be demonstrated by emissions testing to determine the emission rate for HCl and Cl_2, air dispersion modeling to predict the maximum annual average off-site ground level concentration for each compound, and a demonstration that acceptable ambient levels are not exceeded.

(2) Acceptable ambient levels. Appendix IV of Rule R315-266 lists the reference air concentrations (RACs) for HCl, 7 micrograms per cubic meter, and Cl_2, 0.4 micrograms per cubic meter.

(3) Multiple stacks. Owners and operators of facilities with more than one on-site stack from a boiler, industrial furnace, incinerator, or other thermal treatment unit subject to controls on HCl or Cl_2 emissions under a RCRA operating permit or interim status controls shall conduct emissions testing and dispersion modeling to demonstrate that the aggregate emissions from all such on-site stacks do not result in an exceedance of the acceptable ambient levels for HCl and Cl_2.

(d) Averaging periods. The HCl and Cl_2 controls are implemented by limiting the feed rate of total chlorine and chloride in all feedstreams, including hazardous waste, fuels, and industrial furnace feed stocks. Under Tier I, the feed rate of total chloride and chlorine is limited to the Tier I Screening Limits. Under Tier II and Tier III, the feed rate of total chloride and chlorine is limited to the feed rates during the trial burn, for new facilities or an interim status facility applying for a permit, or the compliance test, for interim status facilities). The feed rate limits are based on either:

(1) An hourly rolling average as defined in Section R315-266-102(e)(6); or

(2) An instantaneous basis not to be exceeded at any time.

(e) Adjusted Tier I feed rate screening limits. The owner or operator may adjust the feed rate screening limit

provided by appendix II of Rule R315-266 to account for site-specific dispersion modeling. Under this approach, the adjusted feed rate screening limit is determined by back-calculating from the acceptable ambient level for Cl_2 provided by appendix IV of Rule R315-266 using dispersion modeling to determine the maximum allowable emission rate. This emission rate becomes the adjusted Tier I feed rate screening limit.

(f) Emissions testing. Emissions testing for HCl and Cl_2 shall be conducted using the procedures described in Methods 0050 or 0051, EPA Publication SW-846, as incorporated by reference in Section R315-260-11.

(g) Dispersion modeling. Dispersion modeling shall be conducted according to the provisions of Subsection R315-266-106(h).

(h) Enforcement. For the purposes of permit enforcement, compliance with the operating requirements specified in the permit, under Section R315-266-102, shall be regarded as compliance with Section R315-266-107. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the requirements of Section R315-266-107 may be "information" justifying modification or revocation and re-issuance of a permit under Section R315-270-41.

R315-266-108. Hazardous Waste Burned in Boilers and Industrial Furnaces - Small quantity on-site burner exemption.

(a) Exempt quantities. Owners and operators of facilities that burn hazardous waste in an on-site boiler or industrial furnace are exempt from the requirements of Sections R315-266-100 through 112 provided that:

(1) The quantity of hazardous waste burned in a device for a calendar month does not exceed the limits provided in the following table based on the terrain-adjusted effective stack height as defined in Subsection R315-266-106(b)(3):

Table - Exempt Quantities for Small Quantity Burner Exemption

Terrain-adjusted effective stack height of device (meters)	Allowable hazardous waste burning rate(gallons/month)
0 to 3.9	0
4.0 to 5.9	13
6.0 to 7.9	18
8.0 to 9.9	27
10.0 to 11.9	40
12.0 to 13.9	48
14.0 to 15.9	59
16.0 to 17.9	69
18.0 to 19.9	76
20.0 to 21.9	84

22.0 to 23.9	93
24.0 to 25.9	100
26.0 to 27.9	110
28.0 to 29.9	130
30.0 to 34.9	140
35.0 to 39.9	170
40.0 to 44.9	210
45.0 to 49.9	260
50.0 to 54.9	330
55.0 to 59.9	400
60.0 to 64.9	490
65.0 to 69.9	610
70.0 to 74.9	680
75.0 to 79.9	760
80.0 to 84.9	850
85.0 to 89.9	960
90.0 to 94.9	1,100
95.0 to 99.9	1,200
100.0 to 104.9	1,300
105.0 to 109.9	1,500
110.0 to 114.9	1,700
115.0 or greater	1,900

(2) The maximum hazardous waste firing rate does not exceed at any time 1 percent of the total fuel requirements for the device, hazardous waste plus other fuel, on a total heat input or mass input basis, whichever results in the lower mass feed rate of hazardous waste.

(3) The hazardous waste has a minimum heating value of 5,000 Btu/lb, as generated; and

(4) The hazardous waste fuel does not contain, and is not derived from, EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027.

(b) Mixing with nonhazardous fuels. If hazardous waste fuel is mixed with a nonhazardous fuel, the quantity of hazardous waste before such mixing is used to comply with Subsection R315-266-108(a).

(c) Multiple stacks. If an owner or operator burns hazardous waste in more than one on-site boiler or industrial furnace exempt under Section R315-266-108, the quantity limits provided by Subsection R315-266-108(a)(1) are implemented according to the following equation:

The summation of Actual Quantity Burned$_{(i)}$/Allowable quantity Burned$_{(i)}$ for i=1 to n is less than or equal to 1.0

where:
n means the number of stacks;
Actual Quantity Burned means the waste quantity burned per month in device “i”;
Allowable Quantity Burned means the maximum allowable exempt quantity for stack “i” from the table in Subsection R315-266-108(a)(1).

Hazardous wastes that are subject to the special requirements for small quantity generators under Section R315-261-5 may be burned in an off-site device under the exemption provided by Section R315-266-108, but shall be included in the quantity determination for the exemption.

(d) Notification requirements. The owner or operator of facilities qualifying for the small quantity burner exemption under Section R315-266-108 shall provide a one-time signed, written notice to the Director indicating the following:

(1) The combustion unit is operating as a small quantity burner of hazardous waste;

(2) The owner and operator are in compliance with the requirements of Section R315-266-108; and

(3) The maximum quantity of hazardous waste that the facility may burn per month as provided by Subsection R315-266-108(a)(1).

(e) Recordkeeping requirements. The owner or operator shall maintain at the facility for at least three years sufficient records documenting compliance with the hazardous waste quantity, firing rate, and heating value limits of Section R315-266-108. At a minimum, these records shall indicate the quantity of hazardous waste and other fuel burned in each unit per calendar month, and the heating value of the hazardous waste.

R315-266-109. Hazardous Waste Burned in Boilers and Industrial Furnaces - Low risk waste exemption.

(a) Waiver of DRE standard. The DRE standard of Subsection R315-266-104(a) does not apply if the boiler or industrial furnace is operated in conformance with Subsection R315-266-109(a)(1) and the owner or operator demonstrates by procedures prescribed in Subsection R315-266-109(a)(2) that the burning will not result in unacceptable adverse health effects.

(1) The device shall be operated as follows:

(i) A minimum of 50 percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the Director on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel. Such fuels are termed “primary fuel” for purposes of Section R315-266-109. Tall oil is a fuel derived from vegetable and rosin fatty acids. The 50 percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

(ii) Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of 8,000 Btu/lb;

(iii) The hazardous waste is fired directly into the primary fuel flame zone of the combustion chamber; and

(iv) The device operates in conformance with the carbon monoxide controls provided by Subsection R315-266-104(b)(1). Devices subject to the exemption provided by Section R315-266-109 are not eligible for the alternative

carbon monoxide controls provided by Subsection R315-266-104(c).

(2) Procedures to demonstrate that the hazardous waste burning will not pose unacceptable adverse public health effects are as follows:

(i) Identify and quantify those nonmetal compounds listed in appendix VIII, Rule R315-261 that could reasonably be expected to be present in the hazardous waste. The constituents excluded from analysis shall be identified and the basis for their exclusion explained;

(ii) Calculate reasonable, worst case emission rates for each constituent identified in Subsection R315-266-109(a)(2)(i) by assuming the device achieves 99.9 percent destruction and removal efficiency. That is, assume that 0.1 percent of the mass weight of each constituent fed to the device is emitted.

(iii) For each constituent identified in Subsection R315-266-109(a)(2)(i), use emissions dispersion modeling to predict the maximum annual average ground level concentration of the constituent.

(A) Dispersion modeling shall be conducted using methods specified in Subsection R315-266-106(h).

(B) Owners and operators of facilities with more than one on-site stack from a boiler or industrial furnace that is exempt under Section R315-266-109 shall conduct dispersion modeling of emissions from all stacks exempt under Section R315-266-109 to predict ambient levels prescribed by Subsection R315-266-109(a).

(iv) Ground level concentrations of constituents predicted under Subsection R315-266-109(a)(2)(iii) shall not exceed the following levels:

(A) For the noncarcinogenic compounds listed in appendix IV of Rule R315-266, the levels established in appendix IV;

(B) For the carcinogenic compounds listed in appendix V of Rule R315-266, the sum for all constituents of the ratios of the actual ground level concentration to the level established in appendix V cannot exceed 1.0; and

(C) For constituents not listed in appendix IV or V, 0.1 micrograms per cubic meter.

(b) Waiver of particulate matter standard. The particulate matter standard of Section R315-266-105 does not apply if:

(1) The DRE standard is waived under Subsection R315-266-109(a); and

(2) The owner or operator complies with the Tier I or adjusted Tier I metals feed rate screening limits provided by Subsections R315-266-106(b) or (e).

R315-266-110. Hazardous Waste Burned in Boilers and Industrial Furnaces - Waiver of DRE trial burn for boilers. Boilers that operate under the special requirements of Section R315-266-110, and that do not burn hazardous waste containing, or waste derived from, EPA Hazardous Waste Nos.

F020, F021, F022, F023, F026, or F027, are considered to be in conformance with the DRE standard of Subsection R315-266-104(a), and a trial burn to demonstrate DRE is waived. When burning hazardous waste:

(a) A minimum of 50 percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, tall oil, or, if approved by the Director on a case-by-case basis, other nonhazardous fuel with combustion characteristics comparable to fossil fuel. Such fuels are termed "primary fuel" for purposes of Section R315-266-110. Tall oil is a fuel derived from vegetable and rosin fatty acids. The 50 percent primary fuel firing rate shall be determined on a total heat or mass input basis, whichever results in the greater mass feed rate of primary fuel fired;

(b) Boiler load shall not be less than 40 percent. Boiler load is the ratio at any time of the total heat input to the maximum design heat input;

(c) Primary fuels and hazardous waste fuels shall have a minimum as-fired heating value of 8,000 Btu/lb, and each material fired in a burner where hazardous waste is fired shall have a heating value of at least 8,000 Btu/lb, as-fired;

(d) The device shall operate in conformance with the carbon monoxide standard provided by Subsection R315-266-104(b)(1). Boilers subject to the waiver of the DRE trial burn provided by Section R315-266-110 are not eligible for the alternative carbon monoxide standard provided by Subsection R315-266-104(c);

(e) The boiler shall be a watertube type boiler that does not feed fuel using a stoker or stoker type mechanism; and

(f) The hazardous waste shall be fired directly into the primary fuel flame zone of the combustion chamber with an air or steam atomization firing system, mechanical atomization system, or a rotary cup atomization system under the following conditions:

(1) Viscosity. The viscosity of the hazardous waste fuel as-fired shall not exceed 300 SSU;

(2) Particle size. When a high pressure air or steam atomizer, low pressure atomizer, or mechanical atomizer is used, 70% of the hazardous waste fuel shall pass through a 200 mesh, 74 micron, screen, and when a rotary cup atomizer is used, 70% of the hazardous waste shall pass through a 100 mesh, 150 micron, screen;

(3) Mechanical atomization systems. Fuel pressure within a mechanical atomization system and fuel flow rate shall be maintained within the design range taking into account the viscosity and volatility of the fuel;

(4) Rotary cup atomization systems. Fuel flow rate through a rotary cup atomization system shall be maintained within the design range taking into account the viscosity and volatility of the fuel.

R315-266-111. Hazardous Waste Burned in Boilers and Industrial Furnaces - Standards for direct transfer.

(a) Applicability. The regulations in Section R315-266-111 apply to owners and operators of boilers and industrial furnaces subject to Sections R315-266-102 or 103 if hazardous waste is directly transferred from a transport vehicle to a boiler or industrial furnace without the use of a storage unit.

(b) Definitions.

(1) When used in Section R315-266-111, the following terms have the meanings given below:

Direct transfer equipment means any device, including but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of hazardous waste between a container, i.e., transport vehicle, and a boiler or industrial furnace.

Container means any portable device in which hazardous waste is transported, stored, treated, or otherwise handled, and includes transport vehicles that are containers themselves, e.g., tank trucks, tanker-trailers, and rail tank cars, and containers placed on or in a transport vehicle.

(2) Section R315-266-111 references several requirements provided in Sections R315-264-170 through 200 and 40 CFR 265.170 through 202, which are adopted by reference. For purposes of Section R315-266-111, the term "tank systems" in those referenced requirements means direct transfer equipment as defined in Subsection R315-266-111(b)(1).

(c) General operating requirements.

(1) No direct transfer of a pumpable hazardous waste shall be conducted from an open-top container to a boiler or industrial furnace.

(2) Direct transfer equipment used for pumpable hazardous waste shall always be closed, except when necessary to add or remove the waste, and shall not be opened, handled, or stored in a manner that may cause any rupture or leak.

(3) The direct transfer of hazardous waste to a boiler or industrial furnace shall be conducted so that it does not:

(i) Generate extreme heat or pressure, fire, explosion, or violent reaction;

(ii) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

(iii) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(iv) Damage the structural integrity of the container or direct transfer equipment containing the waste;

(v) Adversely affect the capability of the boiler or industrial furnace to meet the standards provided by Sections R315-266-104 through 107; or

(vi) Threaten human health or the environment.

(4) Hazardous waste shall not be placed in direct transfer equipment, if it could cause the equipment or its

secondary containment system to rupture, leak, corrode, or otherwise fail.

(5) The owner or operator of the facility shall use appropriate controls and practices to prevent spills and overflows from the direct transfer equipment or its secondary containment systems. These include at a minimum:

(i) Spill prevention controls, e.g., check valves, dry discount couplings; and

(ii) Automatic waste feed cutoff to use if a leak or spill occurs from the direct transfer equipment.

(d) Areas where direct transfer vehicles, containers, are located. Applying the definition of container under Section R315-266-111, owners and operators shall comply with the following requirements:

(1) The containment requirements of Section R315-264-175;

(2) The use and management requirements of 40 CFR 265.171 through 178, which are adopted by reference, except for 265-174, and except that in lieu of the special requirements of 265-176 for ignitable or reactive waste, the owner or operator may comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjacent property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's (NFPA) “Flammable and Combustible Liquids Code,” (1977 or 1981), incorporated by reference, see Section R315-260-11. The owner or operator shall obtain and keep on file at the facility a written certification by the local Fire Marshall that the installation meets the subject NFPA codes; and

(3) The closure requirements of Section R315-264-178.

(e) Direct transfer equipment. Direct transfer equipment shall meet the following requirements:

(1) Secondary containment. Owners and operators shall comply with the secondary containment requirements of 40 CFR 265.193, which are adopted by reference, except for 265-193(a), (d), (e), and (i) as follows:

(i) For all new direct transfer equipment, prior to their being put into service; and

(ii) For existing direct transfer equipment within 2 years after August 21, 1991.

(2) Requirements prior to meeting secondary containment requirements.

(i) For existing direct transfer equipment that does not have secondary containment, the owner or operator shall determine whether the equipment is leaking or is unfit for use. The owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by a qualified, registered professional engineer in accordance with Subsection R315-270-11(d) that attests to the equipment's integrity by August 21, 1992.

(ii) This assessment shall determine whether the direct transfer equipment is adequately designed and has

sufficient structural strength and compatibility with the waste(s) to be transferred to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment shall consider the following:

(A) Design standard(s), if available, according to which the direct transfer equipment was constructed;

(B) Hazardous characteristics of the waste(s) that have been or will be handled;

(C) Existing corrosion protection measures;

(D) Documented age of the equipment, if available, otherwise, an estimate of the age; and

(E) Results of a leak test or other integrity examination such that the effects of temperature variations, vapor pockets, cracks, leaks, corrosion, and erosion are accounted for.

(iii) If, as a result of the assessment specified above, the direct transfer equipment is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of 40 CFR 265.196(a) and (b), which are adopted by reference.

(3) Inspections and recordkeeping.

(i) The owner or operator shall inspect at least once each operating hour when hazardous waste is being transferred from the transport vehicle, container, to the boiler or industrial furnace:

(A) Overfill/spill control equipment, e.g., waste-feed cutoff systems, bypass systems, and drainage systems, to ensure that it is in good working order;

(B) The above ground portions of the direct transfer equipment to detect corrosion, erosion, or releases of waste, e.g., wet spots, dead vegetation; and

(C) Data gathered from monitoring equipment and leak-detection equipment, e.g., pressure and temperature gauges, to ensure that the direct transfer equipment is being operated according to its design.

(ii) The owner or operator shall inspect cathodic protection systems, if used, to ensure that they are functioning properly according to the schedule provided by 40 CFR 265.195(b), which is adopted by reference:

(iii) Records of inspections made under Subsection R315-266-11(e)(3) shall be maintained in the operating record at the facility, and available for inspection for at least 3 years from the date of the inspection.

(4) Design and installation of new ancillary equipment. Owners and operators shall comply with the requirements of 40 CFR 265.192, which is adopted by reference.

(5) Response to leaks or spills. Owners and operators shall comply with the requirements of 40 CFR 265.196, which is adopted by reference.

(6) Closure. Owners and operators shall comply with the requirements of 40 CFR 265.197, which are adopted by reference, except for 265-197(c)(2) through (c)(4).

R315-266-112. Hazardous Waste Burned in Boilers and Industrial Furnaces - Regulation of residues.

A residue derived from the burning or processing of hazardous waste in a boiler or industrial furnace is not excluded from the definition of a hazardous waste under Subsections R315-261-4(b)(4), (7), or (8) unless the device and the owner or operator meet the following requirements:

(a) The device meets the following criteria:

(1) Boilers. Boilers shall burn at least 50% coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal;

(2) Ore or mineral furnaces. Industrial furnaces subject to Subsection R315-261-4(b)(7) shall process at least 50% by weight normal, nonhazardous raw materials;

(3) Cement kilns. Cement kilns shall process at least 50% by weight normal cement-production raw materials;

(b) The owner or operator demonstrates that the hazardous waste does not significantly affect the residue by demonstrating conformance with either of the following criteria:

(1) Comparison of waste-derived residue with normal residue. The waste-derived residue shall not contain appendix VIII, Rule R315-261 constituents, toxic constituents, that could reasonably be attributable to the hazardous waste at concentrations significantly higher than in residue generated without burning or processing of hazardous waste, using the following procedure. Toxic compounds that could reasonably be attributable to burning or processing the hazardous waste, constituents of concern, include toxic constituents in the hazardous waste, and the organic compounds listed in appendix VIII of Rule R315-266 that may be generated as products of incomplete combustion. For polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans, analyses shall be performed to determine specific congeners and homologues, and the results converted to 2,3,7,8-TCDD equivalent values using the procedure specified in section 4.0 of appendix IX of Rule R315-266.

(i) Normal residue. Concentrations of toxic constituents of concern in normal residue shall be determined based on analyses of a minimum of 10 samples representing a minimum of 10 days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed 24 hours. The upper tolerance limit, at 95% confidence with a 95% proportion of the sample distribution, of the concentration in the normal residue shall be considered the statistically-derived concentration in the normal residue. If changes in raw materials or fuels reduce the statistically-derived concentrations of the toxic constituents of concern in the normal residue, the statistically-derived concentrations shall be revised or statistically-derived concentrations of toxic constituents in normal residue shall be established for a new mode of operation with the new raw material or fuel. To determine

the upper tolerance limit in the normal residue, the owner or operator shall use statistical procedures prescribed in "Statistical Methodology for Bevill Residue Determinations" in appendix IX of Rule R315-266.

(ii) Waste-derived residue. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under Subsection R315-266-112(b)(1)(i). If so, hazardous waste burning has significantly affected the residue and the residue shall not be excluded from the definition of a hazardous waste. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; or

(2) Comparison of waste-derived residue concentrations with health-based limits

(i) Nonmetal constituents: The concentration of each nonmetal toxic constituent of concern, specified in Subsection R315-266-112(b)(1), in the waste-derived residue shall not exceed the health-based level specified in appendix VII of Rule R315-266, or the level of detection, whichever is higher. If a health-based limit for a constituent of concern is not listed in appendix VII of Rule R315-266, then a limit of 0.002 micrograms per kilogram or the level of detection, which shall be determined by using appropriate analytical procedures, whichever is higher, shall be used. The levels specified in appendix VII of Rule R315-266, and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of appendix VII of Rule R315-266, are administratively stayed under the condition, for those constituents specified in Subsection R315-266-112(b)(1), that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in Section R315-268-43 for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of best good-faith efforts as defined by applicable guidance or standards, the owner or operator is deemed to be in compliance for that constituent. Until new guidance or standards are developed, the owner or operator may demonstrate such good-faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above the level provided by Section R315-268-43

for F039 nonwastewaters. In complying with the Section R315-268-43 F039 nonwastewater levels for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans, analyses shall be performed for total hexachlorodibenzo-p-dioxins, total hexachlorodibenzofurans, total pentachlorodibenzo-p-dioxins, total pentachlorodibenzofurans, total tetrachlorodibenzo-p-dioxins, and total tetrachlorodibenzofurans.

Note to Subsection R315-266-112(b)(2)(i): The administrative stay, under the condition that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in Section R315-268-43 for F039 nonwastewaters, remains in effect until further administrative action is taken and notice is published.

(ii) Metal constituents. The concentration of metals in an extract obtained using the Toxicity Characteristic Leaching Procedure of Section R315-261-24 shall not exceed the levels specified in appendix VII of Rule R315-266; and

(iii) Sampling and analysis. Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; and

(c) Records sufficient to document compliance with the provisions of Section R315-266-112 shall be retained until closure of the boiler or industrial furnace unit. At a minimum, the following shall be recorded.

(1) Levels of constituents in appendix VIII, Rule R315-261, that are present in waste-derived residues;

(2) If the waste-derived residue is compared with normal residue under Subsection R315-266-112(b)(1):

(i) The levels of constituents in appendix VIII, Rule R315-261, that are present in normal residues; and

(ii) Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.

R315-266-202. Military Munitions - Definition of solid waste.

(a) Reserved.

(b) Reserved.

(c) Reserved.

(d) For purposes of Subsection 19-6-102(19)(a), a used or fired military munition is a solid waste, and, therefore, is potentially subject to RCRA corrective action authorities under sections 3004(u) and (v), and 3008(h), or imminent and substantial endangerment authorities under section 7003, if the munition lands off-range and is not promptly rendered safe and/or retrieved. Any imminent and substantial threats associated with any remaining material shall be addressed. If remedial action is infeasible, the operator of the range shall maintain a record of the event for as long as any threat remains. The record shall include the type of munition and its location, to the extent the location is known.

Appendix I to Rule R315-266 - Tier I and Tier II Feed Rate and Emissions Screening Limits for Metals.

Appendix I of 40 CFR 266, 2015 edition, is adopted and incorporated by reference.

Appendix II to Rule R315-266 - Tier I Feed Rate Screening Limits for Total Chlorine.

Terrain-adjusted effective stack height (m)	Noncomplex Terrain Urban (g/hr)	Noncomplex Terrain Rural (g/hr)	Complex Terrain (g/hr)
4	8.2E+01	4.2E+01	1.9E+01
6	9.1E+01	4.8E+01	2.8E+01
8	1.0E+02	5.3E+01	4.1E+01
10	1.2E+02	6.2E+01	5.8E+01
12	1.3E+02	7.7E+01	7.2E+01
14	1.5E+02	9.1E+01	9.1E+01
16	1.7E+02	1.2E+02	1.1E+02
18	1.9E+02	1.4E+02	1.2E+02
20	2.1E+02	1.8E+02	1.3E+02
22	2.4E+02	2.3E+02	1.4E+02
24	2.7E+02	2.9E+02	1.6E+02
26	3.1E+02	3.7E+02	1.7E+02
28	3.5E+02	4.7E+02	1.9E+02
30	3.9E+02	5.8E+02	2.1E+02
35	5.3E+02	9.6E+02	2.6E+02
40	6.2E+02	1.4E+03	3.3E+02
45	8.2E+02	2.0E+03	4.0E+02
50	1.1E+03	2.6E+03	4.8E+02
55	1.3E+03	3.5E+03	6.2E+02
60	1.6E+03	4.6E+03	7.7E+02
65	2.0E+03	6.2E+03	9.1E+02
70	2.3E+03	7.2E+03	1.1E+03
75	2.5E+03	8.6E+03	1.2E+03
80	2.9E+03	1.0E+04	1.3E+03
85	3.3E+03	1.2E+04	1.4E+03
90	3.7E+03	1.4E+04	1.6E+03
95	4.2E+03	1.7E+04	1.8E+03
100	4.8E+03	2.1E+04	2.0E+03
105	5.3E+03	2.4E+04	2.3E+03
110	6.2E+03	2.9E+04	2.5E+03

115	7.2E+03	3.5E+04	2.8E+03
120	8.2E+03	4.1E+04	3.2E+03

Appendix III to Rule R315-266 - Tier II Emission Rate Screening Limits for Free Chlorine and Hydrogen Chloride.

Appendix III of 40 CFR 266, 2015 edition, is adopted and incorporated by reference.

Appendix IV to Rule R315-266 - Reference Air Concentrations*.

Constituent	CAS No.	RAC (ug/m^3)
Acetaldehyde	75-07-0	10
Acetonitrile	75-05-8	10
Acetophenone	98-86-2	100
Acrolein	107-02-8	20
Aldicarb	116-06-3	1
Aluminum Phosphide	20859-73-8	0.3
Allyl Alcohol	107-18-6	5
Antimony	7440-36-0	0.3
Barium	7440-39-3	50
Barium Cyanide	542-62-1	50
Bromomethane	74-83-9	0.8
Calcium Cyanide	592-01-8	30
Carbon Disulfide	75-15-0	200
Chloral	75-87-6	2
Chlorine (free)		0.4
2-Chloro-1,3-butadiene	126-99-8	3
Chromium III	16065-83-1	1000
Copper Cyanide	544-92-3	5
Cresols	1319-77-3	50
Cumene	98-82-8	1
Cyanide (free)	57-12-15	20
Cyanogen	460-19-5	30
Cyanogen Bromide	506-68-3	80
Di-n-butyl Phthalate	84-74-2	100
o-Dichlorobenzene	95-50-1	10
p-Dichlorobenzene	106-46-7	10
Dichlorodifluoromethane	75-71-8	200
2,4-Dichlorophenol	120-83-2	3
Diethyl Phthalate	84-66-2	800
Dimethoate	60-51-5	0.8
2,4-Dinitrophenol	51-28-5	2
Dinoseb	88-85-7	0.9
Diphenylamine	122-39-4	20
Endosulfan	115-29-1	0.05
Endrin	72-20-8	0.3
Fluorine	7782-41-4	50
Formic Acid	64-18-6	2000
Glycidyaldehyde	765-34-4	0.3
Hexachlorocyclopentadiene	77-47-4	5
Hexachlorophene	70-30-4	0.3
Hydrocyanic Acid	74-90-8	20
Hydrogen Chloride	7647-01-1	7
Hydrogen Sulfide	7783-06-4	3

Isobutyl Alcohol	78-83-1	300
Lead	7439-92-1	0.09
Maleic Anhydride	108-31-6	100
Mercury	7439-97-6	0.3
Methacrylonitrile	126-98-7	0.1
Methomyl	16752-77-5	20
Methoxychlor	72-43-5	50
Methyl Chlorocarbonate	79-22-1	1000
Methyl Ethyl Ketone	78-93-3	80
Methyl Parathion	298-00-0	0.3
Nickel Cyanide	557-19-7	20
Nitric Oxide	10102-43-9	100
Nitrobenzene	98-95-3	0.8
Pentachlorobenzene	608-93-5	0.8
Pentachlorophenol	87-86-5	30
Phenol	108-95-2	30
M-Phenylenediamine	108-45-2	5
Phenylmercuric Acetate	62-38-4	0.075
Phosphine	7803-51-2	0.3
Phthalic Anhydride	85-44-9	2000
Potassium Cyanide	151-50-8	50
Potassium Silver Cyanide	506-61-6	200
Pyridine	110-86-1	1
Selenious Acid	7783-60-8	3
Selenourea	630-10-4	5
Silver	7440-22-4	3
Silver Cyanide	506-64-9	100
Sodium Cyanide	143-33-9	30
Strychnine	57-24-9	0.3
1,2,4,5-Tetrachlorobenzene	95-94-3	0.3
2,3,4,6-Tetrachlorophenol	58-90-2	30
Tetraethyl Lead	78-00-2	0.0001
Tetrahydrofuran	109-99-9	10
Thallic Oxide	1314-32-5	0.3
Thallium	7440-28-0	0.5
Thallium (I) Acetate	563-68-8	0.5
Thallium (I) Carbonate	6533-73-9	0.3
Thallium (I) Chloride	7791-12-0	0.3
Thallium (I) Nitrate	10102-45-1	0.5
Thallium Selenite	12039-52-0	0.5
Thallium (I) Sulfate	7446-18-6	0.075
Thiram	137-26-8	5
Toluene	108-88-3	300
1,2,4-Trichlorobenzene	120-82-1	20
Trichloromonofluoromethane	75-69-4	300
2,4,5-Trichlorophenol	95-95-4	100
Vanadium Pentoxide	1314-62-1	20
Warfarin	81-81-2	0.3
Xylenes	1330-20-7	80
Zinc Cyanide	557-21-1	50
Zinc Phosphide	1314-84-7	0.3

*The RAC for other appendix VIII Rule R315-261 constituents not listed herein or in appendix V of Rule R315-266 is 0.1 ug/m^3.

Appendix V to Rule R315-266 - Risk Specific Doses.

Constituent	CAS No.	Unit risk (m3/µg)	RsD (µg/m3)
Acrylamide	79-06-1	1.3E-03	7.7E-03
Acrylonitrile	107-13-1	6.8E-05	1.5E-01
Aldrin	309-00-2	4.9E-03	2.0E-03
Aniline	62-53-3	7.4E-06	1.4E+00
Arsenic	7440-38-2	4.3E-03	2.3E-03
Benz(a)anthracene	56-55-3	8.9E-04	1.1E-02
Benzene	71-43-2	8.3E-06	1.2E+00
Benzidine	92-87-5	6.7E-02	1.5E-04
Benzo(a)pyrene	50-32-8	3.3E-03	3.0E-03
Beryllium	7440-41-7	2.4E-03	4.2E-03
Bis(2-chloroethyl) ether	111-44-4	3.3E-04	3.0E-02
Bis(chloromethyl)ether	542-88-1	6.2E-02	1.6E-04
Bis(2-ethylhexyl) -phthalate	117-81-7	2.4E-07	4.2E+01
1,3-Butadiene	106-99-0	2.8E-04	3.6E-02
Cadmium	7440-43-9	1.8E-03	5.6E-03
Carbon Tetrachloride	56-23-5	1.5E-05	6.7E-01
Chlordane	57-74-9	3.7E-04	2.7E-02
Chloroform	67-66-3	2.3E-05	4.3E-01
Chloromethane	74-87-3	3.6E-06	2.8E+00
Chromium VI	7440-47-3	1.2E-02	8.3E-04
DDT	50-29-3	9.7E-05	1.0E-01
Dibenz(a,h)anthracene	53-70-3	1.4E-02	7.1E-04
1,2-Dibromo-3 -chloropropane	96-12-8	6.3E-03	1.6E-03
1,2-Dibromoethane	106-93-4	2.2E-04	4.5E-02
1,1-Dichloroethane	75-34-3	2.6E-05	3.8E-01
1,2-Dichloroethane	107-06-2	2.6E-05	3.8E-01
1,1-Dichloroethylene	75-35-4	5.0E-05	2.0E-01
1,3-Dichloropropene	542-75-6	3.5E-01	2.9E-05
Dieldrin	60-57-1	4.6E-03	2.2E-03
Diethylstilbestrol	56-53-1	1.4E-01	7.1E-05
Dimethylnitrosamine	62-75-9	1.4E-02	7.1E-04
2,4-Dinitrotoluene	121-14-2	8.8E-05	1.1E-01
1,2-Diphenylhydrazine	122-66-7	2.2E-04	4.5E-02
1,4-Dioxane	123-91-1	1.4E-06	7.1E+00
Epichlorohydrin	106-89-8	1.2E-06	8.3E+00
Ethylene Oxide	75-21-8	1.0E-04	1.0E-01
Ethylene Dibromide	106-93-4	2.2E-04	4.5E-02

Formaldehyde	50-00-0	1.3E-05	7.7E-01
Heptachlor	76-44-8	1.3E-03	7.7E-03
Heptachlor Epoxide	1024-57-3	2.6E-03	3.8E-03
Hexachlorobenzene	118-74-1	4.9E-04	2.0E-02
Hexachlorobutadiene	87-68-3	2.0E-05	5.0E-01
Alpha-hexachloro-cyclohexane	319-84-6	1.8E-03	5.6E-03
Beta-hexachloro-cyclohexane	319-85-7	5.3E-04	1.9E-02
Gamma-hexachloro-cyclohexane	58-89-9	3.8E-04	2.6E-02
Hexachlorocyclo-hexane, Technical		5.1E-04	2.0E-02
Hexachlorodibenzo-p-dioxin(1,2 Mixture)		1.3E+0	7.7E-06
Hexachloroethane	67-72-1	4.0E-06	2.5E+00
Hydrazine	302-01-2	2.9E-03	3.4E-03
Hydrazine Sulfate	302-01-2	2.9E-03	3.4E-03
3-Methylcholanthrene	56-49-5	2.7E-03	3.7E-03
Methyl Hydrazine	60-34-4	3.1E-04	3.2E-02
Methylene Chloride	75-09-2	4.1E-06	2.4E+00
4,4'-Methylene-bis-2-chloroaniline	101-14-4	4.7E-05	2.1E-01
Nickel	7440-02-0	2.4E-04	4.2E-02
Nickel Refinery Dust	7440-02-0	2.4E-04	4.2E-02
Nickel Subsulfide	12035-72-2	4.8E-04	2.1E-02
2-Nitropropane	79-46-9	2.7E-02	3.7E-04
N-Nitroso-n-butylamine	924-16-3	1.6E-03	6.3E-03
N-Nitroso-n-methylurea	684-93-5	8.6E-02	1.2E-04
N-Nitrosodiethylamine	55-18-5	4.3E-02	2.3E-04
N-Nitrosopyrrolidine	930-55-2	6.1E-04	1.6E-02
Pentachloronitrobenzene	82-68-8	7.3E-05	1.4E-01
PCBs	1336-36-3	1.2E-03	8.3E-03
Pronamide	23950-58-5	4.6E-06	2.2E+00
Reserpine	50-55-5	3.0E-03	3.3E-03
2,3,7,8-Tetrachloro-dibenzo-p-dioxin	1746-01-6	4.5E+01	2.2E-07
1,1,2,2-Tetrachloroethane	79-34-5	5.8E-05	1.7E-01
Tetrachloroethylene	127-18-4	4.8E-07	2.1E+01
Thiourea	62-56-6	5.5E-04	1.8E-02
1,1,2-Trichloroethane	79-00-5	1.6E-05	6.3E-01
Trichloroethylene	79-01-6	1.3E-06	7.7E+00
2,4,6-Trichlorophenol	88-06-2	5.7E-06	1.8E+00
Toxaphene	8001-35-2	3.2E-04	3.1E-02
Vinyl Chloride	75-01-4	7.1E-06	1.4E+00

Appendix VI to Rule R315-266 - Stack Plume Rise.
Appendix VI of 40 CFR 266, 2015 edition, is adopted and incorporated by reference.

Appendix VII to Rule R315-266 - Health-Based Limits for Exclusion of Waste-Derived Residues.
Metals - TCLP Extract Concentration Limits

Constituent	CAS No.	Concentration limits (mg/L)
Antimony	7440-36-0	1xE+00
Arsenic	7440-38-2	5xE+00
Barium	7440-39-3	1xE+02
Beryllium	7440-41-7	7xE-03
Cadmium	7440-43-9	1xE+00
Chromium	7440-47-3	5xE+00
Lead	7439-92-1	5xE+00
Mercury	7439-97-6	2xE-01
Nickel	7440-02-0	7xE+01
Selenium	7782-49-2	1xE+00
Silver	7440-22-4	5xE+00
Thallium	7440-28-0	7xE+00

Nonmetals - Residue Concentration Limits

Constituent	CAS No.	Concentration limits for residues (mg/kg)
Acetonitrile	75-05-8	2xE-01
Acetophenone	98-86-2	4xE+00
Acrolein	107-02-8	5xE-01
Acrylamide	79-06-1	2xE-04
Acrylonitrile	107-13-1	7xE-04
Aldrin	309-00-2	2xE-05
Allyl alcohol	107-18-6	2xE-01
Aluminum phosphide	20859-73-8	1xE-02
Aniline	62-53-3	6xE-02
Barium cyanide	542-62-1	1xE+00
Benz(a)anthracene	56-55-3	1xE-04
Benzene	71-43-2	5xE-03
Benzidine	92-87-5	1xE-06
Bis(2-chloroethyl) ether	111-44-4	3xE-04
Bis(chloroethyl) ether	542-88-1	2xE-06
Bis(2-ethylhexyl) phthalate	117-81-7	3xE+01
Bromoform	75-25-2	7xE-01
Calcium cyanide	592-01-8	1xE-06
Carbon disulfide	75-15-0	4xE+00
Carbon tetrachloride	56-23-5	5xE-03
Chlordane	57-74-9	3xE-04
Chlorobenzene	108-90-7	1xE+00

Chloroform	67-66-3	6xE-02
Copper cyanide	544-92-3	2xE-01
Cresols (Cresylic acid)	1319-77-3	2xE+00
Cyanogen	460-19-5	1xE+00
DDT	50-29-3	1xE-03
Dibenz(a, h)-anthracene	53-70-3	7xE-06
1,2-Dibromo-3 -chloropropane	96-12-8	2xE-05
p-Dichlorobenzene	106-46-7	7.5xE-02
Dichlorodifluoromethane	75-71-8	7xE+00
1,1-Dichloroethylene	75-35-4	5xE-03
2,4-Dichlorophenol	120-83-2	1xE-01
1,3-Dichloropropene	542-75-6	1xE-03
Dieldrin	60-57-1	2xE-05
Diethyl phthalate	84-66-2	3xE+01
Diethylstilbesterol	56-53-1	7xE-07
Dimethoate	60-51-5	3xE-02
2,4-Dinitrotoluene	121-14-2	5xE-04
Diphenylamine	122-39-4	9xE-01
1,2-Diphenylhydrazine	122-66-7	5xE-04
Endosulfan	115-29-7	2xE-03
Endrin	72-20-8	2xE-04
Epichlorohydrin	106-89-8	4xE-02
Ethylene dibromide	106-93-4	4xE-07
Ethylene oxide	75-21-8	3xE-04
Fluorine	7782-41-4	4xE+00
Formic acid	64-18-6	7xE+01
Heptachlor	76-44-8	8xE-05
Heptachlor epoxide	1024-57-3	4xE-05
Hexachlorobenzene	118-74-1	2xE-04
Hexachlorobutadiene	87-68-3	5xE-03
Hexachlorocyclopentadiene	77-47-4	2xE-01
Hexachlorodibenzo-p -dioxins	19408-74-3	6xE-08
Hexachloroethane	67-72-1	3xE-02
Hydrazine	302-01-1	1xE-04
Hydrogen cyanide	74-90-8	7xE-05
Hydrogen sulfide	7783-06-4	1xE-06
Isobutyl alcohol	78-83-1	1xE+01
Methomyl	16752-77-5	1xE+00
Methoxychlor	72-43-5	1xE-01
3-Methylcholanthrene	56-49-5	4xE-05
4,4'-Methylenebis (2-chloroaniline)	101-14-4	2xE-03
Methylene chloride	75-09-2	5xE-02
Methyl ethyl ketone (MEK)	78-93-3	2xE+00
Methyl hydrazine	60-34-4	3xE-04
Methyl parathion	298-00-0	2xE-02

Naphthalene	91-20-3	1xE+01
Nickel cyanide	557-19-7	7xE-01
Nitric oxide	10102-43-9	4xE+00
Nitrobenzene	98-95-3	2xE-02
N-Nitrosodi-n-butylamine	924-16-3	6xE-05
N-Nitrosodiethylamine	55-18-5	2xE-06
N-Nitroso-N-methylurea	684-93-5	1xE-07
N-Nitrosopyrrolidine	930-55-2	2xE-04
Pentachlorobenzene	608-93-5	3xE-02
Pentachloronitrobenzene (PCNB)	82-68-8	1xE-01
Pentachlorophenol	87-86-5	1xE+00
Phenol	108-95-2	1xE+00
Phenylmercury acetate	62-38-4	3xE-03
Phosphine	7803-51-2	1xE-02
Polychlorinated biphenyls, N.O.S	1336-36-3	5xE-05
Potassium cyanide	151-50-8	2xE+00
Potassium silver cyanide	506-61-6	7xE+00
Pronamide	23950-58-5	3xE+00
Pyridine	110-86-1	4xE-02
Reserpine	50-55-5	3xE-05
Selenourea	630-10-4	2xE-01
Silver cyanide	506-64-9	4xE+00
Sodium cyanide	143-33-9	1xE+00
Strychnine	57-24-9	1xE-02
1,2,4,5-Tetrachlorobenzene	95-94-3	1xE-02
1,1,2,2-tetrachloroethane	79-34-5	2xE-03
Tetrachloroethylene	127-18-4	7xE-01
2,3,4,6-Tetrachlorophenol	58-90-2	1xE-02
Tetraethyl lead	78-00-2	4xE-06
Thiourea	62-56-6	2xE-04
Toluene	108-88-3	1xE+01
Toxaphene	8001-35-2	5xE-03
1,1,2-Trichloroethane	79-00-5	6xE-03
Trichloroethylene	79-01-6	5xE-03
Trichloromonofluoromethane	75-69-4	1xE+01
2,4,5-Trichlorophenol	95-95-4	4xE+00
2,4,6-Trichlorophenol	88-06-2	4xE+00
Vanadium pentoxide	1314-62-1	7xE-01
Vinyl chloride	75-01-4	2xE-03

*Note 1: The health-based concentration limits for appendix VIII Rule R315-261 constituents for which a health-based concentration is not provided below is 2xE-06 mg/kg.

Note 2: The levels specified in this appendix and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of this appendix are administratively stayed under the condition, for those constituents specified in Susection R315-266-112(b)(1), that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in Section R315-268-43 for FO39 nonwastewaters. See Subsection R315-266-112(b)(2)(i).

Appendix VIII to Rule R315-266 - Organic Compounds for Which Residues Shall Be Analyzed.

Volatiles

Benzene
Toluene
Carbon tetrachloride
Chloroform
Methylene chloride
Trichloroethylene
Tetra chloroethylene
1,1,1-Trichloroethane
Chlorobenzene
cis-1,4-Dichloro-2-butene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Methylene bromide
Methyl ethyl ketone

Semivolatiles

Bis(2-ethylhexyl)phthalate
Naphthalene
Phenol
Diethyl phthalate
Butyl benzyl phthalate
2,4-Dimethylphenol
o-Dichlorobenzene
m-Dichlorobenzene
p-Dichlorobenzene
Hexachlorobenzene
2,4,6-Trichlorophenol
Fluoranthene
o-Nitrophenol
1,2,4-Trichlorobenzene
o-Chlorophenol
Pentachlorophenol
Pyrene
Dimethyl phthalate
Mononitrobenzene

2,6-Toluene diisocyanate
Polychlorinated dibenzo-p-dioxins[1]
Polychlorinated dibenzo-furans[1]

[1]Analyses for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans are required only for residues collected from areas downstream of the combustion chamber, e.g., ductwork, boiler tubes, heat exchange surfaces, air pollution control devices, etc.

Note to Appendix VIII: Analysis is not required for those compounds that do not have an established F039 nonwastewater concentration limit.

Appendix IX to Rule R315-266 - Methods Manual for Compliance With the BIF Regulations.
Appendix IX of 40 CFR 266, 2015 edition, is adopted and incorporated by reference.

Appendix XI to Rule R315-266 - Lead-Bearing Materials That May be Processed in Exempt Lead Smelters.

A. Exempt Lead-Bearing Materials When Generated or Originally Produced By Lead-Associated Industries[1]

Acid dump/fill solids

Sump mud

Materials from laboratory analyses

Acid filters

Baghouse bags

Clothing, e.g., coveralls, aprons, shoes, hats, gloves

Sweepings

Air filter bags and cartridges

Respiratory cartridge filters

Shop abrasives

Stacking boards

Waste shipping containers, e.g., cartons, bags, drums, cardboard

Paper hand towels

Wiping rags and sponges

Contaminated pallets

Water treatment sludges, filter cakes, residues, and solids

Emission control dusts, sludges, filter cakes, residues, and solids from lead-associated industries, e.g., K069 and D008 wastes

Spent grids, posts, and separators

Spent batteries

Lead oxide and lead oxide residues

Lead plates and groups

Spent battery cases, covers, and vents

Pasting belts

Water filter media

Cheesecloth from pasting rollers

Pasting additive bags

Asphalt paving materials

B. Exempt Lead-Bearing Materials When Generated or Originally Produced By Any Industry

Charging jumpers and clips

Platen abrasive

Fluff from lead wire and cable casings

Lead-based pigments and compounding pigment dust

[1]Lead-associated industries are lead smelters, lead-acid battery manufacturing, and lead chemical manufacturing, e.g., manufacturing of lead oxide or other lead compounds.

Appendix XII to Rule R315-266 - Nickel or Chromium-Bearing Materials that may be Processed in Exempt Nickel-Chromium Recovery Furnaces.

A. Exempt Nickel or Chromium-Bearing Materials when Generated by Manufacturers or Users of Nickel, Chromium, or Iron

Baghouse bags

Raney nickel catalyst

Floor sweepings

Air filters

Electroplating bath filters

Wastewater filter media

Wood pallets

Disposable clothing (coveralls, aprons, hats, and gloves)

Laboratory samples and spent chemicals

Shipping containers and plastic liners from containers or vehicles used to transport nickel or chromium-containing wastes

Respirator cartridge filters

Paper hand towels

B. Exempt Nickel or Chromium-Bearing Materials when Generated by Any Industry

Electroplating wastewater treatment sludges (F006)

Nickel and/or chromium-containing solutions

Nickel, chromium, and iron catalysts

Nickel-cadmium and nickel-iron batteries

Filter cake from wet scrubber system water treatment plants in the specialty steel industry[1]

Filter cake from nickel-chromium alloy pickling operations[1]

[1]If a hazardous waste under an authorized State program.

Appendix XIII to Rule R315-266 - Mercury Bearing Wastes That May Be Processed in Exempt Mercury Recovery Units.

These are exempt mercury-bearing materials with less than 500 ppm of Rule R315-261, appendix VIII organic constituents when generated by manufacturers or users of mercury or mercury products.

1. Activated carbon

2. Decomposer graphite

3. Wood

4. Paper

5. Protective clothing

6. Sweepings

7. Respiratory cartridge filters

8. Cleanup articles

9. Plastic bags and other contaminated containers

10. Laboratory and process control samples

11. K106 and other wastewater treatment plant sludge and filter cake

12. Mercury cell sump and tank sludge

13. Mercury cell process solids

14. Recoverable levels of mercury contained in soil